

AutoPilot® M6 Plug-in for Solace Routers Installation and User's Guide

Version 2.5.5
Installation and User's Guide

CONFIDENTIALITY STATEMENT: THE INFORMATION WITHIN THIS MEDIA IS PROPRIETARY IN NATURE AND IS THE SOLE PROPERTY OF NASTEL TECHNOLOGIES, INC. ALL PRODUCTS AND INFORMATION DEVELOPED BY NASTEL ARE INTENDED FOR LIMITED DISTRIBUTION TO AUTHORIZED NASTEL EMPLOYEES, LICENSED CLIENTS, AND AUTHORIZED USERS. THIS INFORMATION (INCLUDING SOFTWARE, ELECTRONIC AND PRINTED MEDIA) IS NOT TO BE COPIED OR DISTRIBUTED IN ANY FORM WITHOUT THE EXPRESSED WRITTEN PERMISSION FROM NASTEL TECHNOLOGIES, INC.

PUBLISHED BY:

RESEARCH & DEVELOPMENT
NASTEL TECHNOLOGIES, INC.
88 SUNNYSIDE BLVD, SUITE 101
PLAINVIEW, NY 11803

COPYRIGHT © 2017–2022. ALL RIGHTS RESERVED. NO PART OF THE CONTENTS OF THIS DOCUMENT MAY BE PRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF NASTEL TECHNOLOGIES.

DOCUMENT TITLE: **AUTOPILOT M6 PLUG-IN FOR SOLACE ROUTERS INSTALLATION AND USER'S GUIDE**

VERSION: **2.5.5**

DOCUMENT RELEASE DATE: **MAY 2022**

NASTEL DOCUMENT NUMBER: **M6/SOLACE 200.007.1**

CONFIDENTIALITY STATEMENT: THE INFORMATION WITHIN THIS MEDIA IS PROPRIETARY IN NATURE AND IS THE SOLE PROPERTY OF NASTEL TECHNOLOGIES, INC. ALL PRODUCTS AND INFORMATION DEVELOPED BY NASTEL ARE INTENDED FOR LIMITED DISTRIBUTION TO AUTHORIZED NASTEL EMPLOYEES, LICENSED CLIENTS, AND AUTHORIZED USERS. THIS INFORMATION (INCLUDING SOFTWARE, ELECTRONIC AND PRINTED MEDIA) IS NOT TO BE COPIED OR DISTRIBUTED IN ANY FORM WITHOUT THE EXPRESSED WRITTEN PERMISSION FROM NASTEL TECHNOLOGIES, INC.

ACKNOWLEDGEMENTS:

THE FOLLOWING TERMS ARE TRADEMARKS OF NASTEL TECHNOLOGIES CORPORATION IN THE UNITED STATES OR OTHER COUNTRIES OR BOTH: TRANSACTIONWORKS, AUTOPILOT M6, AUTOPILOT/IT, AUTOPILOT M6 FOR WMQ, AUTOPILOT/WMQ, M6 WEB SERVER, AUTOPILOT/WEB, M6 WEB CONSOLE, MQCONTROL, MQCONTROL EXPRESS, AUTOPILOT/TRANSACTION MONITOR, AUTOPILOT/WAS, AUTOPILOT/OS MONITOR

THE FOLLOWING TERMS ARE TRADEMARKS OF THE IBM CORPORATION IN THE UNITED STATES OR OTHER COUNTRIES OR BOTH: IBM, MQ, MQSERIES, WEBSPIHERE, WEBSPIHERE MQ WIN-OS/2, AS/400, OS/2, DB2, AND AIX, z/OS

THE FOLLOWING TERMS ARE TRADEMARKS OF HEWLETT-PACKARD IN THE UNITED STATES OR OTHER COUNTRIES OR BOTH: OPENVIEW, HP-UX

COMPAQ, THE COMPAQ LOGO, ALPHASERVER, COMPAQ INSIGHT MANAGER, CDA, DEC, DECNET, TRUCLUSTER, ULTRIX, AND VAX REGISTERED IN U.S. PATENT AND TRADEMARK OFFICE. ALPHA AND TRU64 ARE TRADEMARKS OF COMPAQ INFORMATION TECHNOLOGIES GROUP, L.P IN THE UNITED STATES AND OTHER COUNTRIES

SNMPC, SNMPC, WORKGROUP, AND SNMPC ENTERPRISE ARE TRADEMARKS OF CASTLE ROCK COMPUTING IN THE UNITED STATES OR OTHER COUNTRIES, OR BOTH.

SUN, SUN MICROSYSTEMS, THE SUN LOGO, IFORCE, JAVA, NETRA, N1, SOLARIS, SUN FIRE, SUN RAY, SUNSPECTRUM, SUN STOREDGE, SUNTONE, THE NETWORK IS THE COMPUTER, ALL TRADEMARKS AND LOGOS THAT CONTAIN SUN, SOLARIS, OR JAVA, AND CERTAIN OTHER TRADEMARKS AND LOGOS ARE TRADEMARKS OR REGISTERED TRADEMARKS OF SUN MICROSYSTEMS, INC. IN THE UNITED STATES AND OTHER COUNTRIES.

INSTALLANYWHERE IS A REGISTERED TRADEMARK OF ZEROG SOFTWARE IN THE UNITED STATES OR OTHER COUNTRIES, OR BOTH.

THIS PRODUCT INCLUDES SOFTWARE DEVELOPED BY THE APACHE SOFTWARE FOUNDATION ([HTTP://WWW.APACHE.ORG/](http://www.apache.org/)). THE JAKARTA PROJECT" AND "TOMCAT" AND THE ASSOCIATED LOGOS ARE REGISTERED TRADEMARKS OF THE APACHE SOFTWARE FOUNDATION

INTEL, PENTIUM AND INTEL486 ARE TRADEMARKS OR REGISTERED TRADEMARKS OF INTEL CORPORATION IN THE UNITED STATES, OR OTHER COUNTRIES, OR BOTH

MICROSOFT, WINDOWS, WINDOWS NT, WINDOWS XP, AND THE WINDOWS LOGOS ARE REGISTERED TRADEMARKS OF THE MICROSOFT CORPORATION.

UNIX IS A REGISTERED TRADEMARK IN THE UNITED STATES AND OTHER COUNTRIES LICENSED EXCLUSIVELY THROUGH X/OPEN COMPANY LIMITED.

"LINUX" AND THE LINUX LOGOS ARE REGISTERED TRADEMARKS OF LINUS TORVALDS, THE ORIGINAL AUTHOR OF THE LINUX KERNEL. ALL OTHER TITLES, APPLICATIONS, PRODUCTS, AND SO FORTH ARE COPYRIGHTED AND/OR TRADEMARKED BY THEIR RESPECTIVE AUTHORS.

SCO CUSA, SCO DOCTOR, SCO DOCTOR FOR NETWORKS, SCO DOCTOR LITE, SCO GLOBAL ACCESS, SCO MPX, SCO MULTIVIEW, SCO NIHONGO OPENSERVICES, SCO OK, THE SCO OK LOGO, SCO OPENSERVICES, SCO OPEN SERVER, SCO PORTFOLIO, SCO POS SYSTEM, SCO TOOLWARE, AND THE WORLD NEVER STOPS ARE TRADEMARKS OR REGISTERED TRADEMARKS OF CALDERA INTERNATIONAL, INC. IN THE U.S.A. AND OTHER COUNTRIES, ALL RIGHTS RESERVED.

ORACLE® IS A REGISTERED TRADEMARK OF ORACLE CORPORATION AND/OR ITS AFFILIATES

OTHER COMPANY, PRODUCT, AND SERVICE NAMES, MAY BE TRADEMARKS OR SERVICE MARKS OF OTHERS.

Contents

CHAPTER 1: INTRODUCTION	1
1.1 HOW THIS GUIDE IS ORGANIZED	1
1.2 HISTORY OF THIS DOCUMENT	1
1.3 RELATED DOCUMENTS	1
1.4 RELEASE NOTES	1
1.5 INTENDED AUDIENCE	2
1.5.1 <i>User Feedback</i>	2
1.6 SYSTEM REQUIREMENTS.....	2
1.7 TECHNICAL SUPPORT.....	2
1.8 TERMS AND ABBREVIATIONS.....	2
1.9 CONVENTIONS	2
CHAPTER 2: ABOUT THE AUTOPILOT PLUG-IN FOR SOLACE	3
2.1 AUTOPILOT M6 PLUG-IN FOR SOLACE	3
2.1.1 <i>ComponentsExpert</i>	3
2.1.2 <i>CustomQueryExpert</i>	3
2.1.3 <i>EventsExpert</i>	5
CHAPTER 3: INSTALLATION.....	7
3.1 BEFORE INSTALLATION	7
3.1.1 <i>Technical Documents</i>	7
3.1.2 <i>Installation Recommendations</i>	7
3.1.3 <i>EventsExpert Special Requirements</i>	7
3.1.4 <i>Licensing</i>	7
3.1.5 <i>Download</i>	7
3.1.6 <i>Migrating from Previous Versions to 2.4.5</i>	8
3.2 INSTALLING THE PLUG-IN	9
3.2.1 <i>Installing from a Command Prompt</i>	9
3.2.2 <i>Installing from a Windows Environment</i>	11
CHAPTER 4: USING AUTOPILOT M6 PLUG-IN FOR SOLACE.....	13
4.1 ADDING A SOLACE ROUTER.....	13
4.2 EDITING EXISTING SERVER INSTANCE.....	15
4.3 REMOVING EXISTING SERVER INSTANCE.....	15
4.4 DEPLOYING THE SOLACE EXPERTS	16
4.5 SOLACE EVENT SYSLOG LISTENER	26
CHAPTER 5: METRICS.....	29
5.1 DATA COLLECTION	29
5.1.1 <i>Appliance Data</i>	29
5.1.2 <i>Appliance Data Collected from VPN</i>	29
5.1.3 <i>Cache Data</i>	30
5.1.4 <i>Client Data</i>	30
5.1.5 <i>Hardware Data</i>	31
5.1.6 <i>Queue Data</i>	31
5.1.7 <i>VPN Data</i>	32
5.1.8 <i>Message Spool Data</i>	32
CHAPTER 6: BUSINESS VIEWS.....	33
6.1 SOLACE HEALTH MONITOR	34
APPENDIX A: REFERENCES	35
A.1 NASTEL DOCUMENTATION	35
A.2 OTHER DOCUMENTATION	35
APPENDIX B: CONVENTIONS.....	37

B.1	TYPOGRAPHICAL CONVENTIONS	37
GLOSSARY	39
INDEX	45

Figures

FIGURE 2-1. REPORTED FACT STRUCTURE	4
FIGURE 3-1. FILE PATH INPUT SCREEN.....	9
FIGURE 3-2. VERIFY INSTALLATION SCREEN.....	10
FIGURE 3-3. VERIFY JAR FILES.....	10
FIGURE 3-4. AUTOPILOT M6 PACKAGE MANAGER WINDOW.....	11
FIGURE 3-5. SELECT PACKAGE TO INSTALL WINDOW	11
FIGURE 3-6. INSTALLATION COMPLETE.....	12
FIGURE 3-7. INSTALLATION DETAILS	12
FIGURE 4-1. ADD SOLACE ROUTER	13
FIGURE 4-2. SOLACE ROUTER PROFILE	13
FIGURE 4-3. SOLACE ROUTER REGISTRY.....	14
FIGURE 4-4. EDITING SOLACE ROUTER REGISTRY	15
FIGURE 4-5. REMOVING SOLACE ROUTER REGISTRY	15
FIGURE 4-6. CONFIRM REMOVAL	16
FIGURE 4-7. DEPLOY SOLACE ROUTERS.....	16
FIGURE 4-8. GENERAL TAB	17
FIGURE 4-9. ABOUT TAB	18
FIGURE 4-10. DEPENDENCIES TAB	19
FIGURE 4-11. FACT OPTIONS TAB	20
FIGURE 4-12. LOGGING TAB.....	21
FIGURE 4-13. RECORDING TAB.....	22
FIGURE 4-14. RESTART-RECOVERY TAB	23
FIGURE 4-15. SECURITY TAB.....	24
FIGURE 4-16. OTHER TAB	25
FIGURE 4-17. SOLACE EVENT PROPERTIES MENU	26
FIGURE 4-18. SOLACE EVENT PROPERTIES.....	26
FIGURE 4-19. SOLACE EVENT PROPERTIES – SYSLOG OPTIONS.....	27
FIGURE 6-1. BUSINESS VIEW EXPLORER	33
FIGURE 6-2. SAMPLE HEALTH BUSINESS VIEW	34

Tables

TABLE 1-1. DOCUMENT HISTORY	1
TABLE 4-1. SOLACE ROUTER PROFILE.....	14
TABLE 4-2. GENERAL	17
TABLE 4-3. ABOUT	18
TABLE 4-4. DEPENDENCIES.....	19
TABLE 4-5. FACT OPTIONS	20
TABLE 4-6. LOGGING.....	21
TABLE 4-7. RECORDING.....	22
TABLE 4-8. RESTART-RECOVERY	23
TABLE 4-9. SECURITY.....	24
TABLE 4-10. OTHER.....	25
TABLE 4-11. SYSLOG OPTIONS	27
TABLE 5-1. APPLIANCE DATA	29
TABLE 5-2. APPLIANCE DATA COLLECTED FROM VPN	29
TABLE 5-3. CACHE DATA	30
TABLE 5-4. CLIENT DATA.....	30
TABLE 5-5. HARDWARE DATA.....	31
TABLE 5-6. QUEUE DATA	31
TABLE 5-7. VPN DATA.....	32
TABLE 5-8. MESSAGE SPOOL DATA.....	32
TABLE 6-1. DEFAULT BUSINESS VIEW.....	33
TABLE A-1. NASTEL DOCUMENTATION	35
TABLE A-2. OTHER DOCUMENTATION	35
TABLE B-1. TYPOGRAPHICAL CONVENTIONS	37

Chapter 1: Introduction

Welcome to the *Nastel AutoPilot M6 Plug-in for Solace Routers Installation and User's Guide*. This guide describes the installation and uses of the plug-in. Please review this guide carefully before using the product.

1.1 How This Guide is Organized

[Chapter 1:](#) Identifies the users and history of the document. System requirements are outlined in addition to supplying support and reference information.

[Chapter 2:](#) Contains a brief description of AutoPilot M6 Plug-in for Solace Routers.

[Chapter 3:](#) Provides instructions for new installations of AutoPilot M6 Plug-in for Solace Routers.

[Chapter 4:](#) Provides instructions for configuring and using AutoPilot M6 Plug-in for Solace Routers.

[Chapter 5:](#) Defines the Solace metrics (data collection).

[Chapter 6:](#) Outlines the Solace business views.

[Appendix A:](#) Provides a list of reference information for using AutoPilot M6 Plug-in for Solace Routers.

[Appendix B:](#) Contains conventions used in this document.

[Glossary:](#) Contains a listing of unique and common acronyms and words and their definition.

[Index:](#) Contains an alphanumeric cross-reference of all topics and subjects of importance.

1.2 History of This Document

Release Date	Document Number	Version	Summary
January 2011	M6/SOLACE 100.001	1.0	Initial release
December 2011	M6/SOLACE 200.002	2.2	Added Message Spool Monitor and Syslog listener
November 2012	M6/SOLACE 200.003	2.4	Added QueryExpert and EventsExpert
April 2016	M6/SOLACE 200.004	2.4	Added custom query
August 2016	M6/SOLACE 200.005	2.4.5	SEMP query modified to return multi-page results
December 2016	M6/SOLACE 200.006	2.5.5	Support for http connection
August 2017	M6/SOLACE 200.007	2.5.5	Update Nastel's phone numbers and address
May 2022	M6/SOLACE 200.007.1		Changed title to <i>AutoPilot[®] M6 Plug-in for Solace Routers Installation and User's Guide</i>

1.3 Related Documents

A complete listing of related and referenced documents is in [Appendix A](#) of this guide.

1.4 Release Notes

See **README.htm** files on your installation media or AutoPilot installation directory. Release notes and updates are also available through the Nastel Resource Center at: <http://www.nastel.com/resources>.

1.5 Intended Audience

This document is intended for personnel using and customizing Nastel's AutoPilot. The user should be familiar with:

- AutoPilot M6 deployment
- Solace router versions 7 or later
- Target operating system environment
- Procedures for installing software on the target platform

The installer may need administrative privileges for the target platform.

1.5.1 User Feedback

Nastel encourages all users of AutoPilot Plug-in for Solace to submit comments, suggestions, corrections, and recommendations for improvement for all AutoPilot Plug-in for Solace documentation. Please send your comments via mail or e-mail. Send e-mail messages to support@nastel.com. You will receive a written response, along with status of any proposed change, update, or correction.

1.6 System Requirements

AutoPilot M6 Plug-in for Solace requires the following:

- AutoPilot M6 SU22
- JDK 1.7 or higher
- One or more Solace Routers
- Approximately 1M of disk space.

1.7 Technical Support

If you need additional technical support, you can contact Nastel by telephone or by e-mail.

- To contact Nastel technical support by telephone, call **800-963-9822 ext. 1**. If you are calling from outside the United States, dial **001-516-801-2100**.
- To contact Nastel technical support by e-mail, send a message to support@nastel.com.
- To contact Nastel technical support through the support website (user ID and password are required), go to <http://www.support.nastel.com>, or visit the Nastel Resource Center at: <http://www.nastel.com/resources>.

Contact your local AutoPilot M6 administrator for further information.

1.8 Terms and Abbreviations

A list of terms and abbreviation used in all AutoPilot M6 documentation is located in the [Glossary](#).

1.9 Conventions

Refer to [Appendix B](#) for typographical and naming conventions used in all AutoPilot M6 documentation.

Chapter 2: About the AutoPilot Plug-in for Solace

AutoPilot M6 Plug-in for Solace enables the monitoring of multiple Solace appliances including the performance of the devices themselves, events generated by the appliances, VPNs, and the Solace message cache.

This chapter describes the Solace Plug-in and its application with AutoPilot M6.

2.1 AutoPilot M6 Plug-in for Solace

The AutoPilot M6 Plug-in for Solace collects runtime and configuration information from Solace routers. The plugin contains the following experts:

- ComponentsExpert ([section 2.1.1](#))
- CustomQueryExpert ([section 2.1.2](#))
- EventsExpert ([section 2.1.3](#)).

The plug-in supports Solace router version 7 and later, and is built using lib version 5.5.1.12.

2.1.1 ComponentsExpert

Upon startup, the plug-in connects to a managed VPN using topic "**#P2P/%s/#client/SEMP**". Then, the plug-in periodically collects the router's data and metrics by issuing SEMP commands over the Solace Message Bus.

The collected data includes:

- Appliance specifications ([Table 5-1](#))
- Appliance incoming/outgoing data statistics ([Table 5-2](#))
- Cache and cache-level statistics ([Table 5-3](#))
- Router clients ([Table 5-4](#))
- Hardware properties and specifications ([Table 5-5](#))
- Router queues ([Table 5-6](#))
- List of VPNs and VPN-level statistics ([Table 5-7](#))
- Current/max messages spooled ([Table 5-8](#)).

2.1.2 CustomQueryExpert

This expert allows the user to specify and execute a custom SEMP query. The result of the query is converted to and published as AutoPilot facts.

The type of command that the expert can execute can only be a query; that is, only the commands that are the children of SEMP's `<show>` tag, as in:

```
<rpc semp-version="soltr7_0">
  <show>
    <version></version>
  </show>
</rpc>
```

When entering a custom SEMP query, provide only the part of the command that is inside the `<show>` `</show>` tags. For instance, the version query above would be entered as simply "`<version></version>`".

The facts reported by AutoPilot will use the same structure as the SEMP responses.

For example:

Query Response

```
<rpc>
  <show>
    <version>
      <executables>
        <executable>
          <name>CLI</name>
          <release>5.5.0.59</release>
          <build-date>2012-06-15T16:28:53-05:00</build-date>
        </executable>
      </executables>
      <loads>
        <load>
          <index>1</index>
          <version>soltr_4.4.12</version>
        </load>
        <current-load>soltr_5.5.0.59</current-load>
        <backout-load>soltr_5.4.1.8</backout-load>
      </loads>
    </version>
  </show>
</rpc>
```

Reported Fact Structure

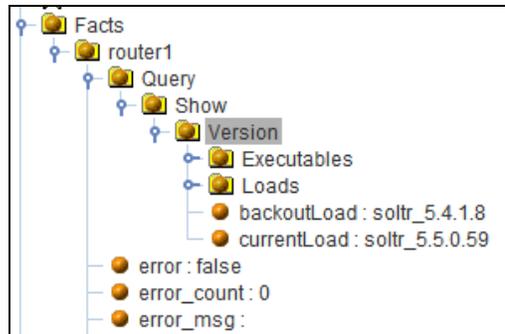


Figure 2-1. Reported Fact Structure

Response Too Big Error

If the expert reports the error "*response too big: use sequenced get*", the SEMP query needs to be modified to return multi-page results. (See Solace SEMP documentation for using 'more-cookie'.)

Limitations

Although the expert is able to process multi-page responses, each part of the multi-page response needs to have the same outer elements XML structure. For instance, consider a multi-page reply consisting of the following two partial replies:

Partial Reply 1

```

<rpc>
  <show>
    <client>
      <primary-virtual-router>
        <client>
          ...
        </primary-virtual-router>
      <primary-virtual-router>
        <client>
          ...
        </primary-virtual-router>
    </client>
  </show>
</rpc>

```

Partial Reply 2

```

<rpc>
  <show>
    <client>
      <primary-virtual-router>
        <client>
          ...
        </primary-virtual-router>
      <internal-virtual-router>
        <client>
          ...
        </internal-virtual-router>
    </client>
  </show>
</rpc>

```

The structure of the two replies is different because in the first reply all the client data is contained within the `<primary-virtual-router>` tags, while in the second reply the client data is also contained inside the `<internal-virtual-router>` tag.

The expert will not process such a query correctly reporting only the data contained in the first outer tag: `<primary-virtual-router>`.

In order to report all data, modify the SEMP query so that each part of the multi-page reply uses the same outer elements structure, or use multiple SEMP queries.

NOTE: SEMP queries generating very large responses will slow down the expert performance. Please fine-tune custom SEMP queries to return only the data that is necessary.

2.1.3 EventsExpert

The expert subscribes to Solace events and reports when these events are received. The EventExpert requires a router configuration change. (Refer to [section 3.1.3](#).)

This page intentionally left blank.

Chapter 3: Installation

This chapter provides instructions for a typical installation and setup requirements for the AutoPilot M6 Plug-in for Solace.

3.1 Before Installation

3.1.1 Technical Documents

Prior to installation you should review all text files and installation procedures. You should print, as needed, all of the installation-related materials to give yourself quick access to any required information during any installation or migration procedures. Additional sets of printed documents are available from your Nastel representative or Nastel Support.

3.1.2 Installation Recommendations

Nastel recommends that you observe the following update sequence when updating AutoPilot with patches, updates, and service packs:

- Machines running the Domain Server
- Machines running the managed nodes.

3.1.3 EventsExpert Special Requirements

The plugin's EventsExpert requires a router configuration change. In order for the expert to receive Solace events, the router must be configured for event publishing.

Each Message VPN to be monitored must be enabled for client-scope event publishing. (Refer to publish-client command line interface (CLI) command in a Solace administration guide.)

An event is generally published only on the VPN where it was generated. In order to publish the event on the Management VPN where Solace expert is listening, the “configureEventLogging” directive for this event must be specified in the router config file `eventConfiguration.intrc` which is located in the `configs` directory:

```
configureEventLogging "<eventName>", "<severityLevel>" [, "<publishVpn>"]  
where <publishVpn> is either "MANAGEMENT_VPN" or "BOTH_VPN"
```

For example:

```
configureEventLogging "CLIENT_CLIENT_DISCONNECT", "INFO", "MANAGEMENT_VPN"
```

3.1.4 Licensing

A copy of the standard Licensing Agreement is imbedded in the installation software and is provided on the [Nastel Resource Center](#). The formal licensing agreement has been furnished in the purchase agreement package.

3.1.5 Download

Download the Solace Plug-in, `AP_SOLACE-<version_number>.pkg` (for example, `AP_SOLACE-2.4.0.pkg`), from the [Nastel Resource Center](#), or copy from your installation media.

3.1.6 Migrating from Previous Versions to 2.4.5

1. Save router profiles. (This is a backup in case it is needed.)
For each AutoPilot Solace service, right-click on its "Router_Registry" and select "Export registry" to save the settings to a file.
2. Shut down Domain Server, Managed Node, and AutoPilot console.
3. Copy 'registry.xml' (located in the Managed Node's 'localhost' directory) to 'registry_backup.xml'.
4. Install Solace expert 2.4.5 as described in [section 3.2](#).
5. Open 'registry.xml' and replace:
 - a. each instance of "com.nastel.nmx.expert.solace.SolaceGroupExpert" with:
"com.nastel.nmx.expert.solace.ComponentsExpert"
 - b. each instance of "com.nastel.nmx.expert.solace.SolaceRouterProfile" with:
"com.nastel.nmx.expert.solace.components.ComponentsProfile"
6. Startup Domain Server, Managed Node, and AutoPilot console.
7. Check that all the Solace services and router profiles are valid.

3.2 Installing the Plug-in

3.2.1 Installing from a Command Prompt

1. Save your work and log off AutoPilot M6.
2. Stop the managed nodes and/or Domain Servers that will be updated as specified in the *AutoPilot M6 User's Guide*.
3. Copy `AP_SOLACE-<version_number>.pkg` into the `[AUTOPILOT_HOME]\updates` directory.
4. Navigate to the `[AUTOPILOT_HOME]\bin` directory.
5. At the command prompt run:
`[AUTOPILOT_HOME]\bin\pkgman ..\updates\AP_SOLACE-<version_number>.pkg`

```
D:\>\nastel\AutoPilotM6\bin\pkgman .. \nastel\AutoPilotM6\updates\AP_SOLACE-2.4.5.pkg
Loading properties from file="D:\nastel\AutoPilotM6\global.properties", filter=*
Loaded properties from file="D:\nastel\AutoPilotM6\global.properties", filter=*
Loading Logging log4j.config=D:\nastel\AutoPilotM6\log4j.properties, exists=true
AutoPilot M6 Package Manager Version 6.0
Copyright (C) 1998-2012 Nastel All rights reserved.

Loaded 9 packages from "packages.xml"
Installing package "AP_SOLACE-2.4.5.pkg"...
Checking installed packages...
Installing "SOLACE-Plugin 2.4.5"...
-----Installing Solace plugin-----
Backing up "lib/solace-plugin.jar", mimetype=application/octet-stream ...
Creating "lib/solace-plugin.jar", mimetype=application/octet-stream, size=646518 ...
Creating "lib/commons-lang-2.2.jar", mimetype=application/octet-stream, size=243016 ...
Backing up "lib/jsr173_api.jar", mimetype=application/octet-stream ...
Creating "lib/jsr173_api.jar", mimetype=application/octet-stream, size=26396 ...
Creating "lib/sol-common-5.5.1.12.jar", mimetype=application/octet-stream, size=211466 ...
Creating "lib/sol-jcsmp-5.5.1.12.jar", mimetype=application/octet-stream, size=969735 ...
-----Installing Solace resources-----
Creating "localhost/import/solace_services.xml", mimetype=text/xml, size=17945 ...
copy text input_encoding=ASCII, output_encoding=Cp1252
Creating "localhost/import/Solace/solace_health.pxml", mimetype=text/autopilot-xml-policy, size=111184 ...
copy text input_encoding=ASCII, output_encoding=Cp1252
-----Applying plugin settings-----
Backing up "plugin.properties", mimetype=text/properties-java ...
copy text input_encoding=ASCII, output_encoding=Cp1252
Changing "plugin.properties"...
"SOLACE-Plugin 2.4.5" installed.

D:\>
```

Figure 3-1. File Path Input Screen

5. Verify plug-in installation: `[AUTOPILOT_HOME]\bin\pkgman -info`. The details of the Package Manager are listed. Verify `SOLACE-Plugin(AP_SOLACE-<version_number>.pkg)` is listed. Make sure there are no errors posted at the bottom of the screen.

```
D:\>\nastel\AutoPilotM6\bin\pkgman -info
Loading properties from file="D:\nastel\AutoPilotM6\global.properties", filter=*
Loaded properties from file="D:\nastel\AutoPilotM6\global.properties", filter=*, elapsed.ms=0
Loading Logging log4j.config=D:\nastel\AutoPilotM6\log4j.properties, exists=true
AutoPilot M6 Package Manager Version 6.0
Copyright (C) 1998-2012 Nastel All rights reserved.

Loaded 9 packages from "packages.xml"

Package                                Version    Size(KB)    Time
-----
AutoPilot M6(NA)                       6.0        NA          2013-08-20 15:46:26
JRE(NA)                                 1.6.0_16   NA          2012-01-17 14:27:58
AIM-Plugin(NA)                          6.0.20     69          2010-04-07 10:42:29
ServiceUpdate(AP60_SU18.pkg)           6.0.18     4267        2013-03-18 15:43:05
Core-GEF(AP_CORE_GEF-2.3.2.pkg)        2.3.2      420         2013-03-18 14:32:56
TIBCO-RU-Plugin(AP_TIB_RU-2.4.8.pkg)    2.4.8      215         2012-11-12 14:22:01
SOLACE-Plugin(AP_SOLACE-2.4.5.pkg)      2.4.5      1849        2013-08-20 15:46:25
GOOGLE-CAL-Plugin(AP_GOOGLE_CAL-1.0.4) 1.0.4      1906        2013-04-11 13:59:03
TWORKS-TA(AP_TWORKS_TA-6.5.1.4.pkg)    6.5.1.4    13208       2013-08-16 11:15:49

D:\>
```

Figure 3-2. Verify Installation Screen

6. Also verify that the following jar files have been copied into the `lib` directory.
- `sol-common-5.5.1.12.jar`
 - `sol-jcsmp-5.5.1.12.jar`
 - `solace-plugin.jar`

In this example change directory to `lib` then run the `dir` command.

```
C:\Users\cmiska>D:
D:\>cd D:\nastel\AutoPilotM6\lib
D:\nastel\AutoPilotM6\lib>dir
Volume in drive D has no label.
Volume Serial Number is A769-1FB9

Directory of D:\nastel\AutoPilotM6\lib
```

Figure 3-3. Verify JAR Files

A list of files will be displayed.

3.2.2 Installing from a Windows Environment

1. Save your work and log off AutoPilot M6.
2. At your PC navigate to **Start > Nastel AutoPilot M6 > M6 Product Maintenance** to display the following window.

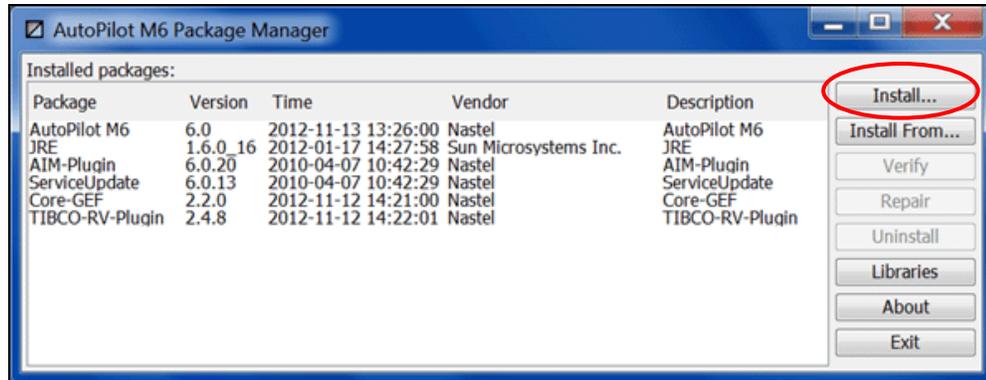


Figure 3-4. AutoPilot M6 Package Manager Window

3. Click **Install** to open the *Select Package to Install* window.

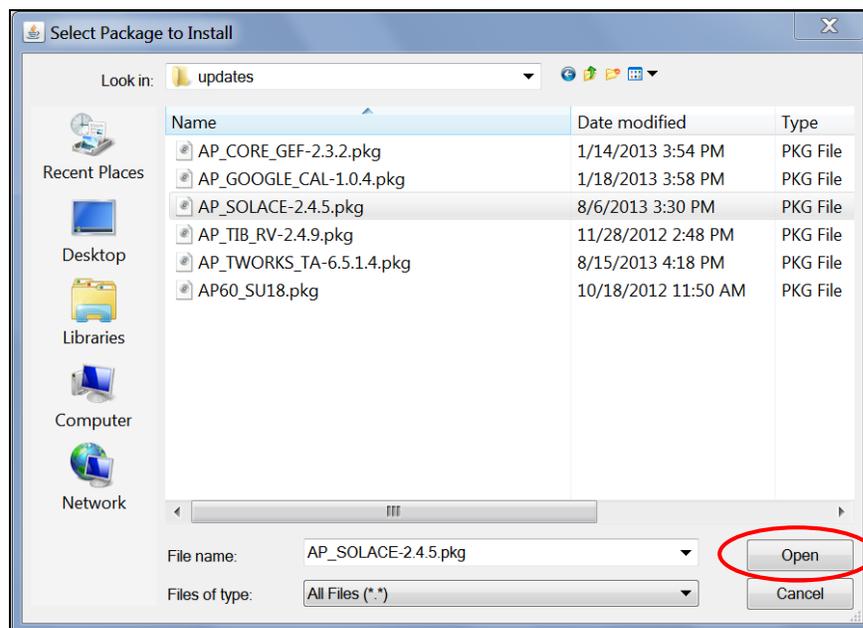


Figure 3-5. Select Package to Install Window

4. Select **AP_SOALCE-*<version_number>*.pkg** and click **Open** to install. A confirmation message is displayed when installation is complete.

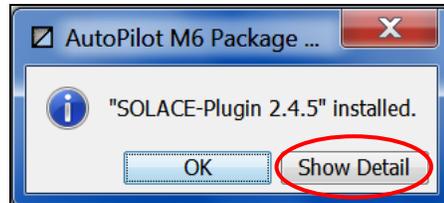


Figure 3-6. Installation Complete

5. Click **Show Detail** to verify installation and to see the following jar files are copied into the **lib** directory.

- solace-plugin.jar
- sol-common-5.2.1.2.jar
- sol-jcsmp-5.5.1.2.jar

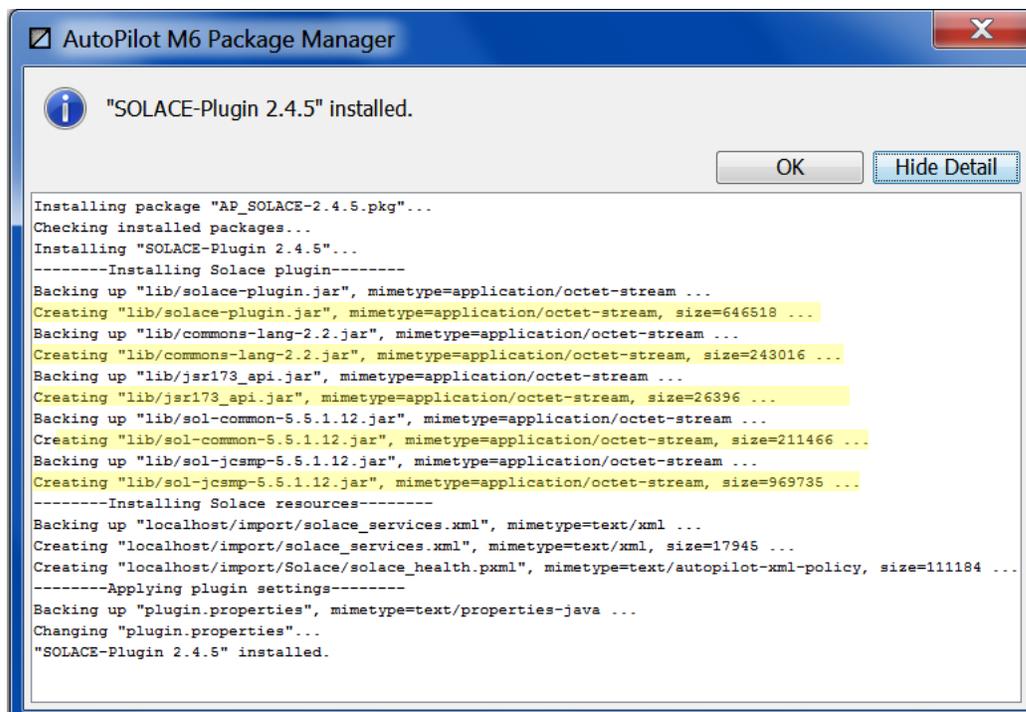


Figure 3-7. Installation Details

Chapter 4: Using AutoPilot M6 Plug-in for Solace

The Solace plug-in installation creates a parent folder called **Solace_Middleware** which contains that following three folders with components already installed.

1. **Solace_Events:** An instance of the Syslog expert to receive data from the Solace router. This does not require configuration, but must match how the Solace Router is configured to send the data.
2. **Solace_Group:** A pre-installed instance of the Solace expert. This entry must have instances of the Solace routers as described in [section 4.1](#).
3. **Solace_Manager:** Out of the box policies for Solace.
 - **solace_health** includes policies for the Appliance, the Cache, and any VPNs.

4.1 Adding a Solace Router

1. Right-click on **Router Registry >Add Router**.

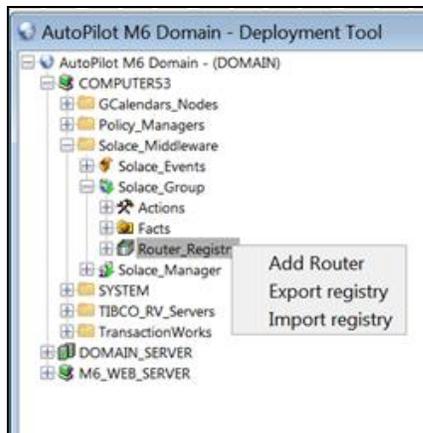


Figure 4-1. Add Solace Router

2. The *Server profile* is displayed. Configure the profile properties and select the monitors, as defined in [Table 4-1](#), to be deployed for the router.

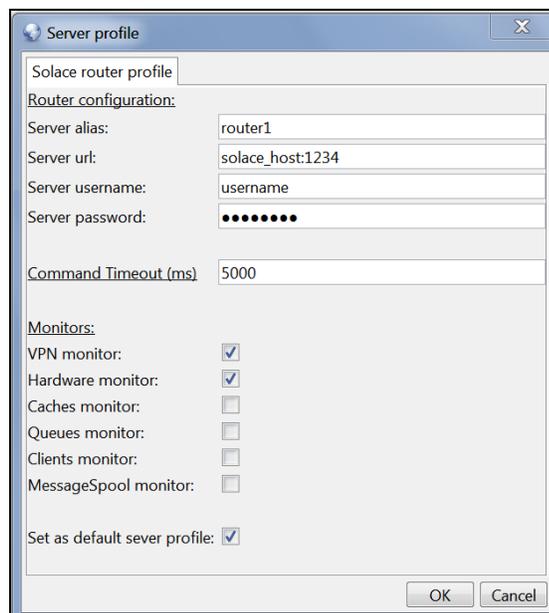


Figure 4-2. Solace Router Profile

Table 4-1. Solace Router Profile	
Router Configuration:	
Property	Description
Server alias	The value displayed in AutoPilot for this instance of the Solace router profile configuration. It should be unique within an instance of Solace router expert.
Server url (host:port)	The URL of Solace router. Note: This is the HTTP management interface port; It is the management IP / DNS and the port on which SEMP is configured
Server username	User ID used to connect to machine running the Solace router. The user name must be defined as a management user and requires read only privileges. The expert will return all data for all VPNs and objects configured on the Solace Router that the User ID above is authorized to use
Server password	Password used to authenticate this user to the machine running Solace router.
Command Timeout (ms)	Defines how many milliseconds to wait before cancelling a command and generating an error.
Monitors to Deploy:	
Monitor	Types of Data
VPN monitor	Received/sent stats, egress/ingress stats, subscriptions, etc.
Hardware monitor	Blades, interfaces, memory, temperatures, CPU cores
Caches monitor	Messages/bytes cached, topics, request rate, etc.
Queues monitor	Spool usage, egress/ingress status, bind count, etc.
Clients monitor	Uptime, egress discards, router type
Message Spool monitor	Current/max messages spooled, etc.
Set as default server profile	Enables/disables setting server default profile

3. Click **OK**. You will see the router listed.

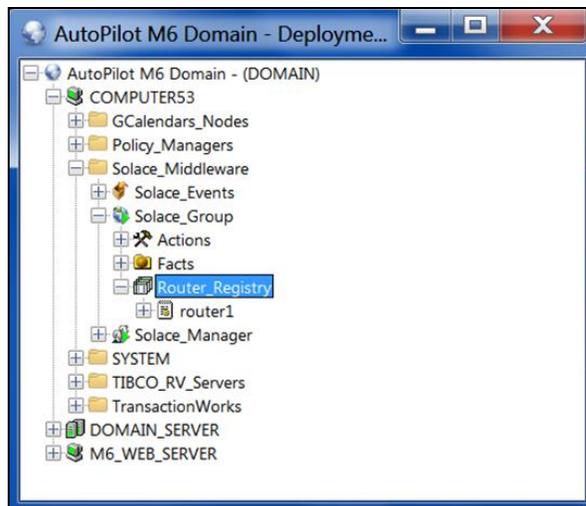


Figure 4-3. Solace Router Registry

4.2 Editing Existing Server Instance

1. Expand the **Server_Registry** folder.
2. Right-click the router alias to be edited.
3. Click **Show server properties**. The *Solace router profile* screen ([Figure 4-2](#)) is displayed. Configure according to [section 4.1](#).

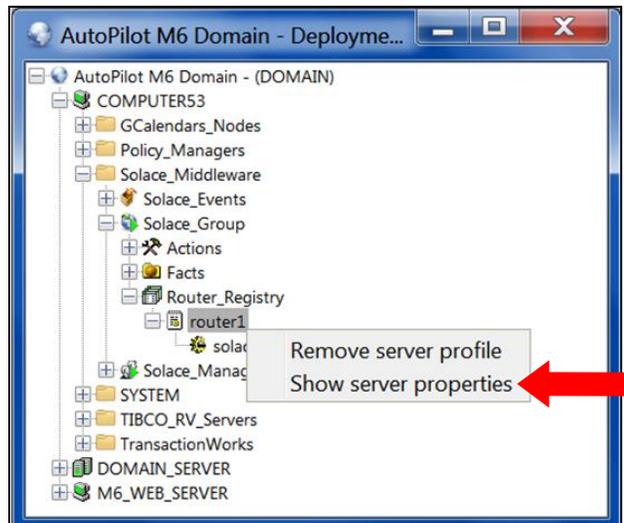


Figure 4-4. Editing Solace Router Registry

4.3 Removing Existing Server Instance

1. Expand the **Server_Registry** folder.
2. Right-click the router alias to be edited.
3. Click **Remove server profile**.

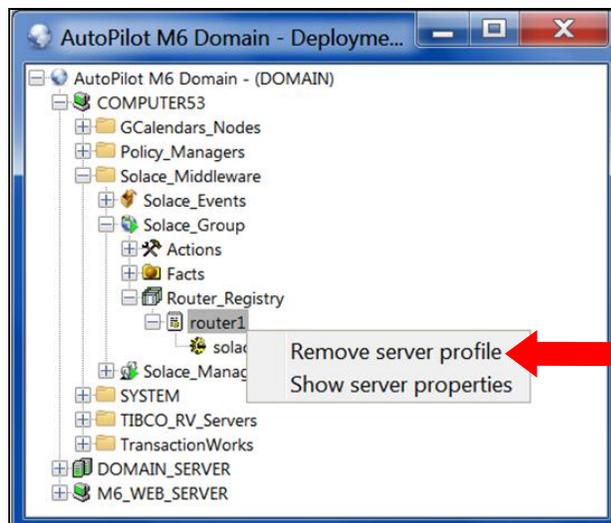


Figure 4-5. Removing Solace Router Registry

4. The confirmation dialog box is displayed. Click **Yes** to remove the router or **No** to cancel.

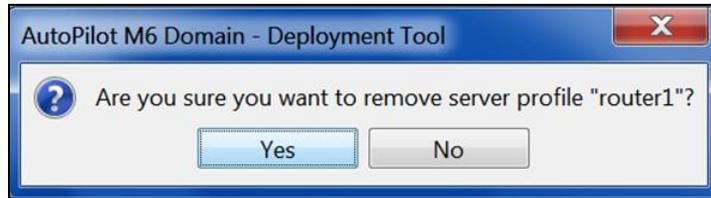


Figure 4-6. Confirm Removal

4.4 Deploying the Solace Experts

Deploying the Solace experts is not necessary with the default installation, but may be completed to re-install a deleted expert.

1. Open the AutoPilot M6 Console.
2. Right click on the managed node that has Solace installed.
3. Click **Deploy Expert > Solace > ComponentsExpert/QueryExpert/EventExpert**.

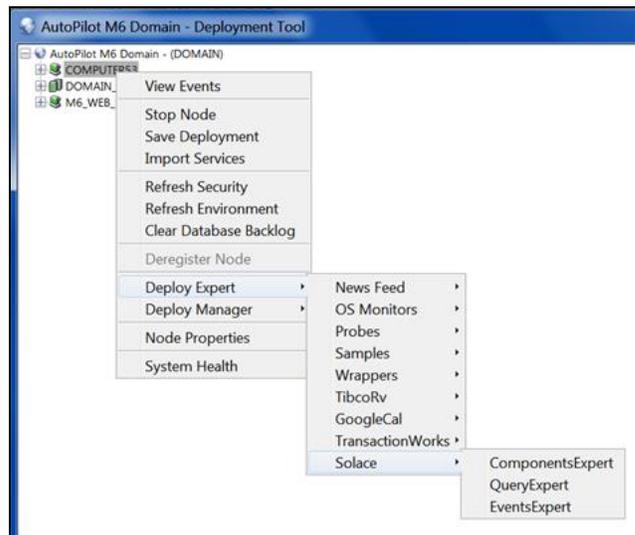


Figure 4-7. Deploy Solace Routers

NOTE: The expert creation process is the same for all three types, expect the EventExpert has an addition screen, the tab entitled **Other**, which is shown in the following example.

4. The *General* tab is displayed. It is recommended that you update the description, context, and name to define each expert. These parameters are common to all experts.

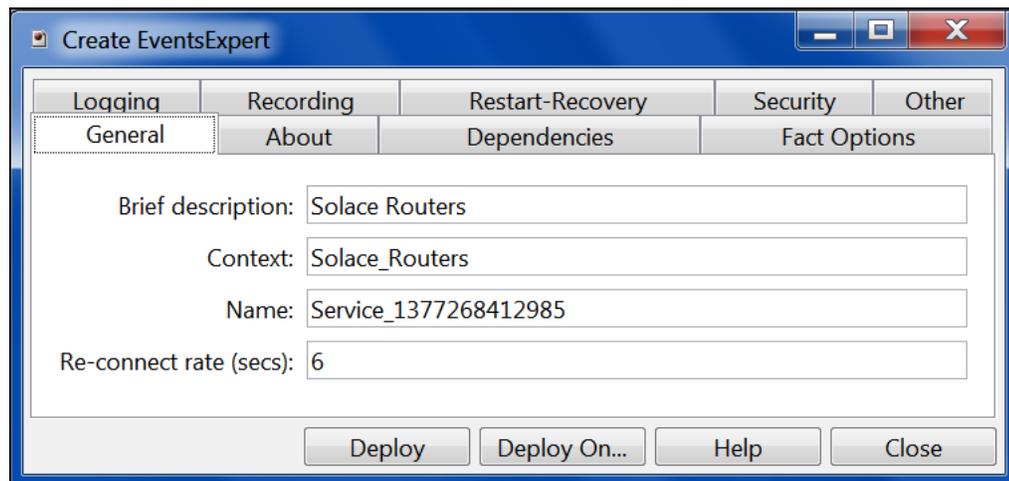


Figure 4-8. General Tab

Table 4-2. General	
Property	Description
Brief description	Short, user-defined description of the service.
Context	User-defined category that will be registered with the domain server. The default is Solace_Routers .
Name	Name that uniquely identifies the service in this domain.
Re-connect rate (secs)	Rate in seconds at which the expert will attempt to reconnect to the target server, in seconds if connection failed. Default is 6 .

- Click the *About* tab. These parameters are common to all experts and cannot be edited. These parameters are common to all experts.

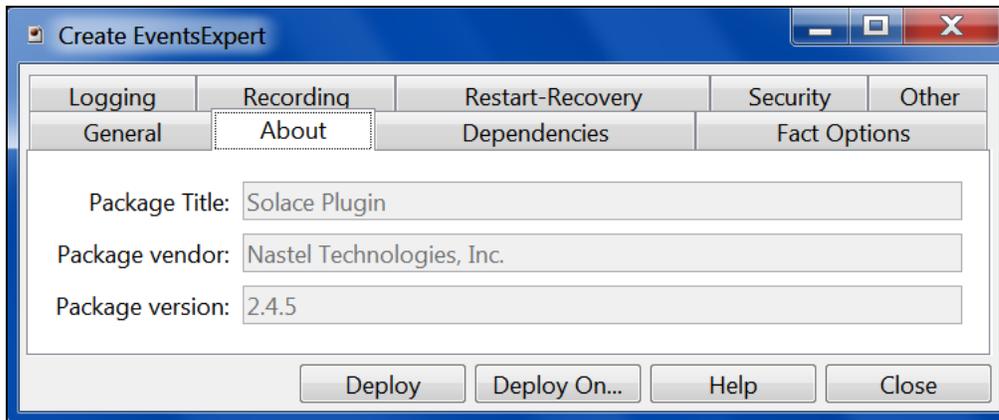


Figure 4-9. About Tab

Property	Description
Package Title	Implementation title of the source package.
Package vendor	Name of implementation vendor.
Package version	Package version as assigned by the vendor.

6. Click the *Dependencies* tab. Edit properties described in the table below, as required. These parameters are common to all experts.

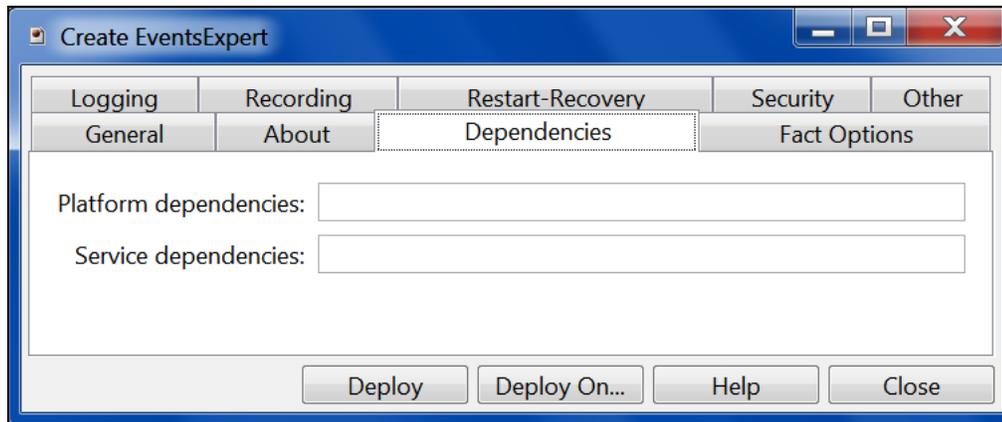


Figure 4-10. Dependencies Tab

Table 4-4. Dependencies	
Property	Description
Platform dependencies	Dependencies on operating system platforms, which are expressed in a comma separated list.
Service dependencies	Dependencies on other services, which are expressed in a comma separated list.

- Click the *Fact Options* tab. Edit properties described in the table below, as required. These parameters are common to all experts.

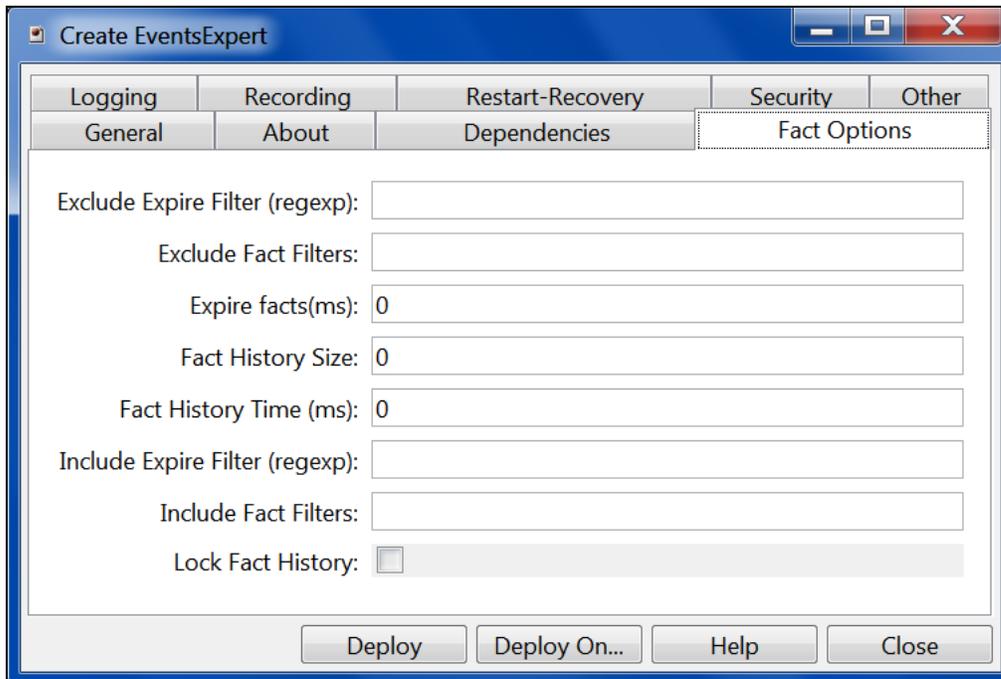


Figure 4-11. Fact Options Tab

Property	Description
Exclude Expire Filter (regex)	Do not expire facts that match specified regular expression.
Exclude Fact Filters	Comma separated list of fact paths to exclude during publishing. For example: *SYSTEM*, *FactName*
Expire facts (ms)	User-defined time in which facts that have not been updated within a specific time automatically expire (in milliseconds). 0 means never expire. <i>Expire facts</i> must be less than <i>Statistics reset rate</i> value (in seconds), under the <i>Statistics</i> tab, or the facts will continue to reset and never expire.
Fact History Size	Automatically maintain the specified number of samples for each published fact in memory. 0 means there is no limit.
Fact History Time (ms)	Automatically maintain fact history not exceeding specified time in milliseconds.
Include Fact Filters	Comma separated list of fact paths to include during publishing. For example: *SYSTEM*, *FactName*
Lock Fact History	Enables/disables history collection after accumulating the first history batch up to Fact History Time or Fact History Size which ever limit is reached first. If disabled newer history samples replace older on a rolling basis.

8. Click the *Logging* tab. Edit properties as defined in the table below, as required. These parameters are common to all experts.

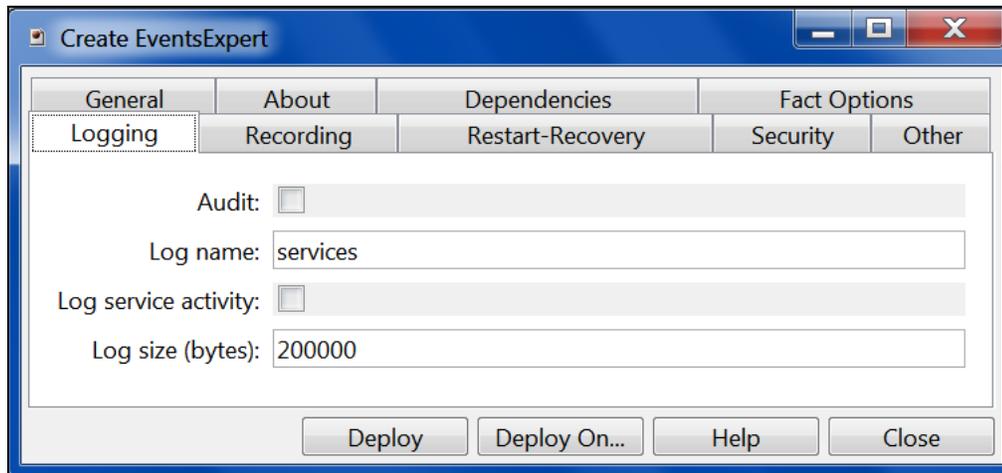


Figure 4-12. Logging Tab

Table 4-6. Logging	
Property	Description
Audit	Enable/disable service audit trace.
Log name	Log name associated with the service. Default is services .
Log service activity	Enable/disable service activity trace.
Log size (bytes)	Enter log file size if the activity is enabled. Default is 200000 .

- Click the *Recording* tab. Edit properties as defined in the table below, as required. These parameters are common to all experts.

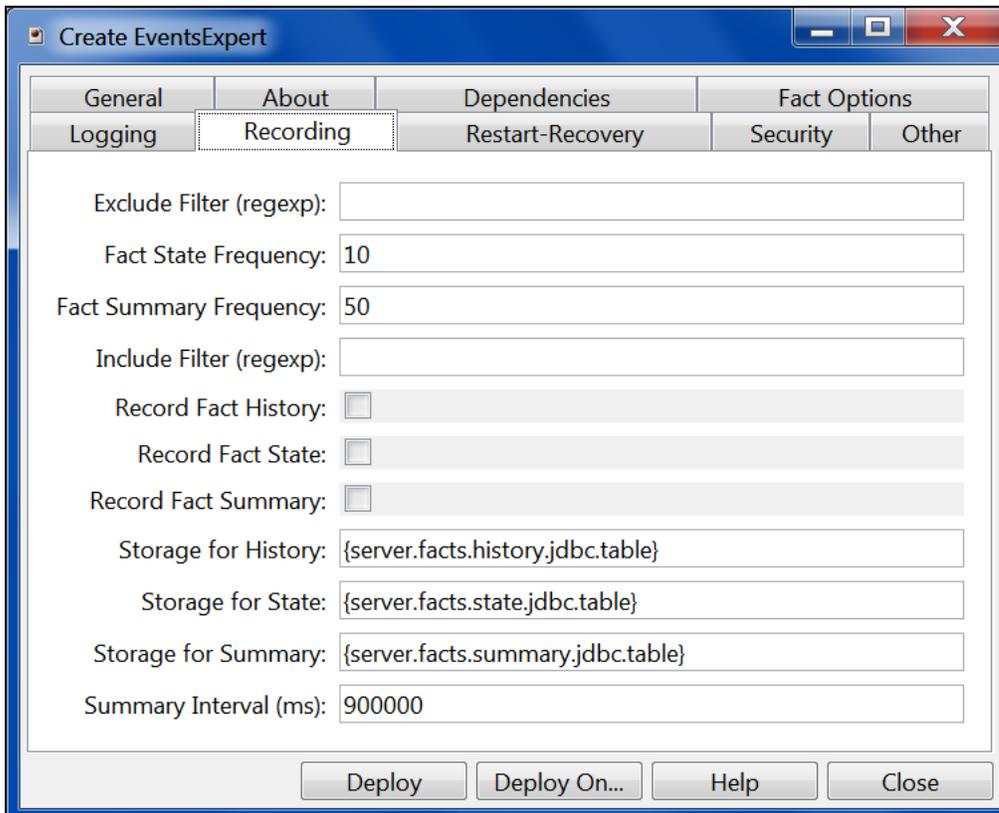


Figure 4-13. Recording Tab

Property	Description
Exclude Filter (regexp)	A regular expression filter to exclude certain facts from being written to the database. Facts have the format <code>expert\class\instance\leaf=value</code> such as in the example <code>Servers\Linux\Serv7\processes=40</code> .
Fact State Frequency	If Record Fact State is enabled, the value entered here specifies how often the Fact State is updated.
Fact Summary Frequency	If Record Fact Summary is enabled, used to write an intermediate summary record every X th update to the fact during the Summary Interval. In this example, every 50 th update to the fact an intermediate summary record is recorded. This is done to avoid waiting 15 minutes for a summary record to appear in the summary table.
Include Filter (regexp)	A regular expression filter to include certain facts being written to the database. Same format as described for the exclude filter.
Record Fact History	If enabled, records every fact change into the History database. The exclude/include filters are respected. To define database tables and set AutoPilot options, refer to <i>AutoPilot M6 User's Guide with Service Update 8</i> , section 4.5.4.1.
Record Fact State	If enabled, records the last value published (current state) into the state database and restores that value when the CEP Server is stopped and restarted. The exclude/include filters are respected. To define database tables and set AutoPilot options, refer to <i>AutoPilot M6 User's Guide with Service Update 8</i> , section 4.5.4.1.
Record Fact Summary	If enabled, records summary record at the interval designated in the Summary Interval (ms) field into the Summary database. The exclude/include filters are

Table 4-7. Recording	
Property	Description
	respected. To define database tables and set AutoPilot options, refer to <i>AutoPilot M6 User's Guide with Service Update 8</i> , section 4.5.4.1.
Storage for History	Database table where the Fact History data is stored.
Storage for State	Database table where the Fact State data is stored.
Storage for Summary	Database table where the Fact Summary data is stored.
Summary Interval (ms)	If Record Fact Summary is enabled, designates the interval of time in ms for which baseline numbers for each numeric fact are computed. Summary Interval is only in affect when CEP instance is running in record mode (ATPNODE -record). Default 900000 is 15 minutes, which means maintain a baseline of statistics for each numeric fact for a period of 15 minutes and write a record to the database. At the end of interval fact statistics is reset and the baseline collection starts again.

10. Click the *Restart-Recovery* tab. Edit properties as defined in the table below, as required. These parameters are common to all experts.

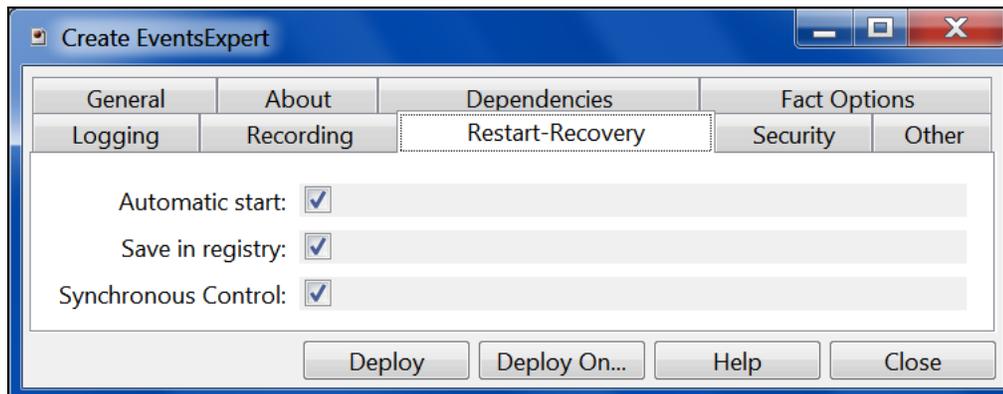


Figure 4-14. Restart-Recovery Tab

Table 4-8. Restart-Recovery	
Property	Description
Automatic start	Enable/disable automatic start of this service.
Save in registry	Enable/disable save persistent services in registry.xml file
Synchronous Control	Enable/disable synchronous service initiation.

11. Click the *Security* tab. Edit properties as defined in the table below, as required. These parameters are common to all experts.

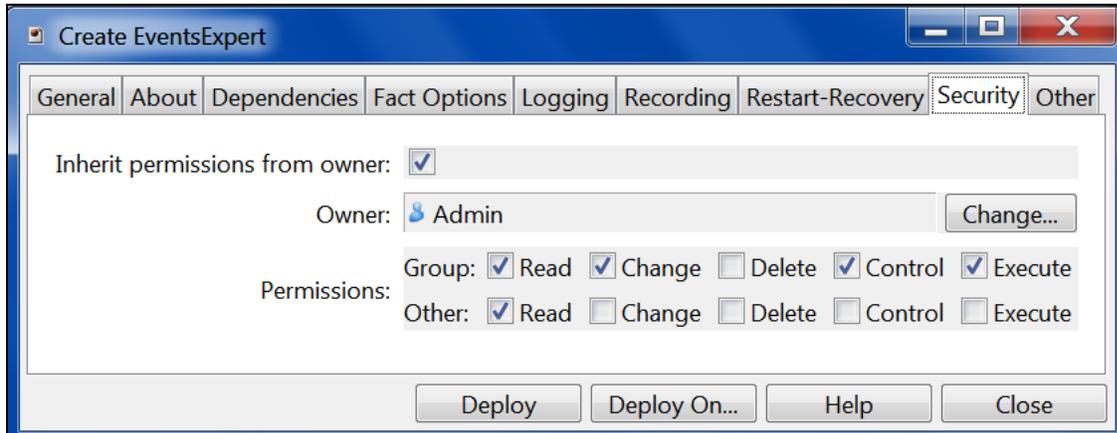


Figure 4-15. Security Tab

Table 4-9. Security		
Property	Description	
Inherit permissions from owner	Enable/disable inheriting of permissions from the owner’s permissions which are applied to the service and displayed in the permission check boxes. If this option is not selected the permissions can be set independently.	
Owner	User that owns the object. Can be edited by clicking Change .	
Permissions	Permissions for users of the same group as the owner and others. Enable/disable as required.	
	Group	Other (Users)
Read	Group members may read/view attributes of an object.	Others may read/view attributes of an object.
Change	Group members may change the attributes of an object.	Others may change the attributes of an object.
Delete	Group members may delete the object.	Others may delete the object.
Control	Group members may execute control actions such as start, stop, and disable.	Others may execute control actions such as start, stop, and disable.
Execute	Group members may execute operational commands on the object.	Others may execute operational commands on the object.

12. Click the *Other* tab. Edit property as defined in the table below, as required. This parameter is only for the Event expert.

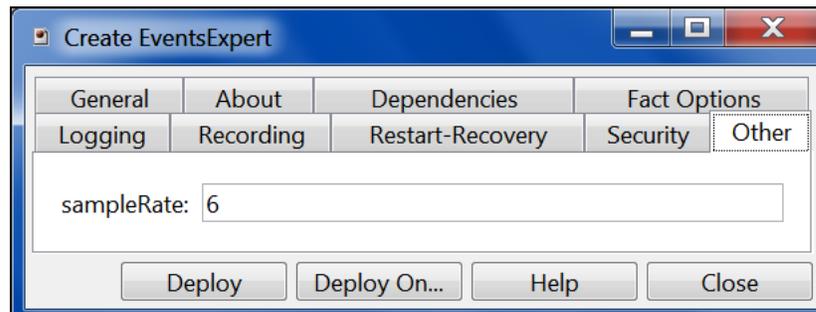


Figure 4-16. Other Tab

Property	Description
sampleRate	Rate in seconds of fact samplings interval in seconds. Default is 6 .

4.5 Solace Event Syslog Listener

Solace Events is an instance of a Syslog listener which listens for Syslog Events as defined in RFC 5424. The Solace router software can be configured to generate syslog messages, as defined in Chapter 3, Event Monitoring Using SoIOS Syslog of the Solace Message Bus Management guide. (See [Appendix A](#).)

The configuration relevant to the AutoPilot Solace Expert is defined below. (For details on all options, refer to the AutoPilot Administration and User Guide).

1. Right click **Solace_Events** > **Properties**.

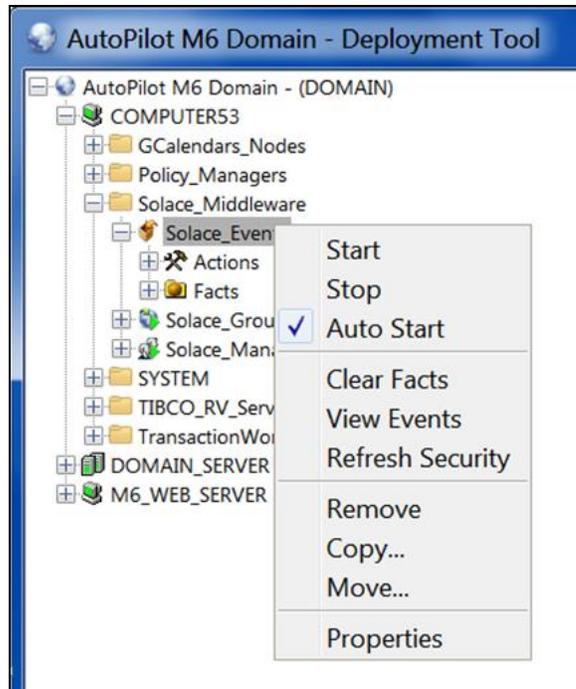


Figure 4-17. Solace Event Properties Menu

2. The *Solace_Events Properties* dialog box is displayed. Click the *Syslog Options* tab.

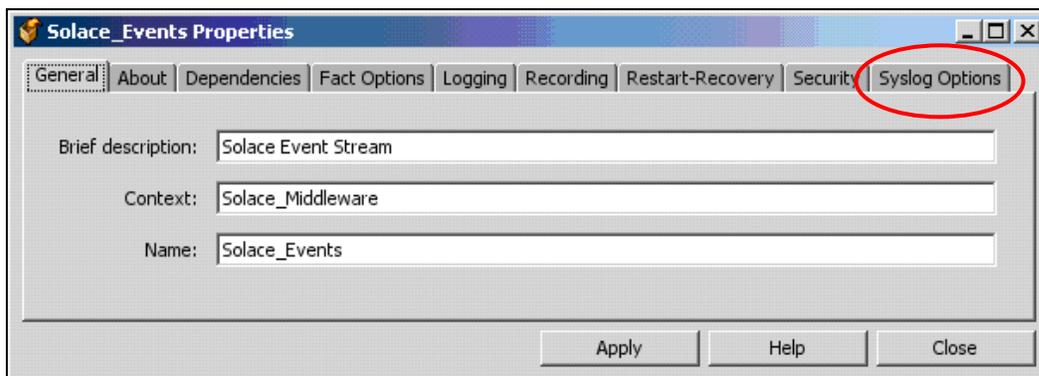


Figure 4-18. Solace Event Properties

3. Edit properties as defined in the table below, as required.

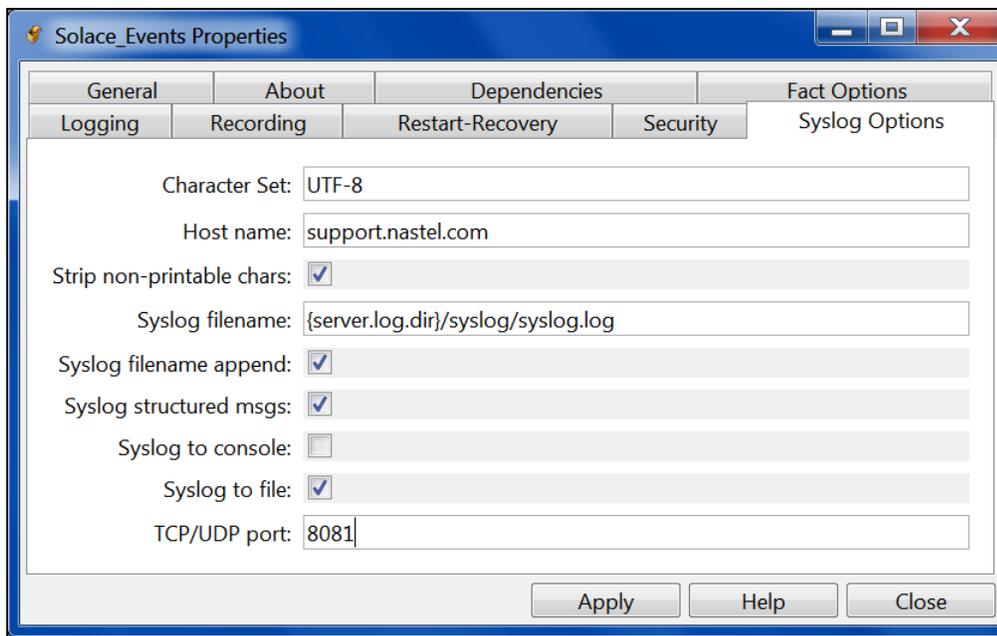


Figure 4-19. Solace Event Properties – Syslog Options

Table 4-11. Syslog Options	
Property	Description
Character Set	Encoding
Host name	Specify the host name to be used on the AutoPilot server to bind the host name. This must match the host that is configured in the Solace router.
Strip non-printable chars	If checked, strips nonprintable characters.
Syslog filename	Specify the log file where Solace events will be captured.
Syslog filename append	Specify the file where log events will be appended.
Syslog structured msgs	If checked, indicated sender is sending messages that have a structure that follows the standard versus just text.
Syslog to console	If checked, captures Solace events to the AutoPilot console output log. Optional
Syslog to file	If checked, captures Solace event to the log file specified in Syslog filename . Optional
TCP/UDP port	Specify the port number to listen for Solace Events. This must match the port number that is configured in the Solace router. The default for Solace is 514, however please note that on UNIX platforms that ports below 1024 require AutoPilot Server to be running as root to use.

The following is a sample of Solace configuration commands to define the events to be sent to AutoPilot.

```
create syslog nastel
facility command
facility event
host 192.168.59.1[777] transport tcp
```

To remove the syslog

```
no syslog nastel
```

This page intentionally left blank.

Chapter 5: Metrics

5.1 Data Collection

This chapter describes the runtime and configuration data collected from Solace routers.

5.1.1 Appliance Data

Table 5-1. Appliance Data		
Name	Type	Description
router-name	string	Name of the appliance
router-version	string	Solace version of the appliance
product-number	string	Machine type
mgmt-username	string	Administrator identifier
appliance-serial-number	string	Serial number of the appliance

5.1.2 Appliance Data Collected from VPN

Table 5-2. Appliance Data Collected from VPN		
Name	Type	Description
stats/bytesReceived	numeric	Total number of bytes received by the appliance
stats/bytesSent	numeric	Total number of bytes sent from the appliance
stats/clientsConnected	numeric	Total number of client connections in the appliance
stats/connections	numeric	Total number of client connections in the VPN
stats/egressDiscards	numeric	Total number of egress message discard in the appliance
stats/ingressDiscards	numeric	Ingress discards no subscriptions match
stats/messagesReceived	numeric	Total number of messages received by the appliance
stats/messagesSent	numeric	Total number of messages send from the appliance
stats/uniqueSubscriptions	numeric	Total number of unique subscriptions

5.1.3 Cache Data

Table 5-3. Cache Data

Name	Type	Description
cacheClusterName/cacheName/cacheTopics	numeric	Total number of cached topics in the VPN
cacheClusterName/cacheName/memoryUtilization	float	Cache memory utilization (%)
cacheClusterName/cacheName/msgBytesCached	numeric	Number of message bytes received per cache
cacheClusterName/cacheName/msgCached	numeric	Number of messages received per cache
cacheClusterName/cacheName/operStatus	up/down	Operation status of the appliance
cacheClusterName/cacheName/requestRate1sec	numeric	Cache request rate/second
cacheClusterName/cacheName/requestRate60secs	numeric	Cache request rate/60 seconds

5.1.4 Client Data

Table 5-4. Client Data

Name	Type	Description
clientName	string	Client name
routerType	string	Client's router type
egressDiscards	numeric	Total number of egress message discard in the appliance
uptime_ms	numeric	The time the client has been up

5.1.5 Hardware Data

Table 5-5. Hardware Data		
Name	Type	Description
Interfaces/Interface_x/eth-mac-address	string	Interface's Ethernet MAC address
Interfaces/interface_x/eth-interface-id	string	Interface's Ethernet interface ID
Interfaces/interface_x/enabled	string	Whether the interface is enabled or disabled
Interfaces/interface_x/linkDetected	string	Whether link to the interface has been detected
CPU-cores/cpu_x/hi	numeric	Hardware IRQ
CPU-cores/cpu_x/id	numeric	Idle CPU time
CPU-cores/cpu_x/ni	numeric	User "nice" CPU time
CPU-cores/cpu_x/si	numeric	Software IRQ
CPU-cores/cpu_x/sy	numeric	System CPU time
CPU-cores/cpu_x/us	numeric	User CPU time
CPU-cores/cpu_x/wa	numeric	IO wait CPU time
Temperatures/CPU1 Core Temp	numeric	CPU1 core's temperature
Temperatures/CPU2 Core Temp	numeric	CPU2 core's temperature
Temperatures/NPU Core Temp	numeric	Network Processor Unit core's temperature
Blades/slot_x/blade-serial-number	string	Blade serial number
Blades/slot_x/blade-card-type	string	Blade card type

5.1.6 Queue Data

Table 5-6. Queue Data		
Name	Type	Description
vpnName/queueName/bindCount	numeric	Bind count
vpnName/queueName/egressConfigStatus	up/down	Egress configuration status
vpnName/queueName/ingressConfigStatus	up/down	Ingress configuration status
vpnName/queueName/message-vpn	string	Queue's message-VPN
vpnName/queueName/numMsgsSpooled	numeric	Number of spooled messages
vpnName/queueName/type	string	Queue type

5.1.7 VPN Data

Table 5-7. VPN Data		
Name	Type	Description
vpnName	string	Name of the VPN
clientBytesReceived	numeric	Total number of bytes received by the VPN
clientBytesSent	numeric	Total number of bytes sent from the VPN
clientMessagesReceived	numeric	Total number of messages received by the VPN
clientMessagesSent	numeric	Total number of messages sent from the VPN
connections	numeric	Total number of client connections in the VPN
egressDiscardsNoSubMatch	numeric	Egress discards no subscriptions match
enabled	true, false	Whether VPN is enabled or disabled
ingressDiscardsNoSubMatch	numeric	Ingress discards no subscriptions match
localUniqueSubscriptions	numeric	Number of unique local subscriptions
operational	true, false	Whether VPN is operational
remoteUniqueSubscriptions	numeric	Number of unique remote subscriptions
uniqueSubscriptions	numeric	Number of unique subscriptions

5.1.8 Message Spool Data

Table 5-8. Message Spool Data		
Name	Type	Description
currentSpoolUsageMb	numeric	Current message spool usage in Mbits
maxSpoolUsageMb	numeric	Max message spool usage in Mbits
currentMessagesSpooled	numeric	Number of messages currently spooled
numQueues	numeric	Number of queues
numTopicEndpoints	numeric	Number of topic end-points

Chapter 6: Business Views

AutoPilot M6 Plug-in for Solace comes with a business view that can be user customized. The Solace business view is located in directory: `[AUTOPILOT_HOME]\Naming\Policies\Solace`.

Table 6-1 Default Business View		
Business View	Filename	Description
Solace-Environment Health	solace_health.pxml	Generic business view that monitors Solace router health status and messages.

This business view can be found in the *Business View Explorer* at:

```
ds:/Solace/solace_health.pxml
```

Business views are configured based on Server Expert.

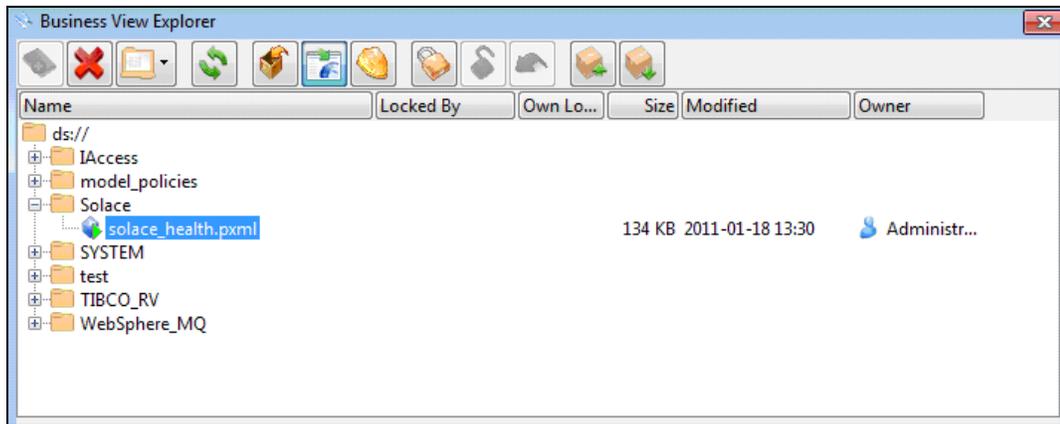


Figure 6-1. Business View Explorer

6.1 Solace Health Monitor

The Solace Health Monitor monitors the health of the Solace router environment. The figure below is a sample of a running Solace Environment Health business view.

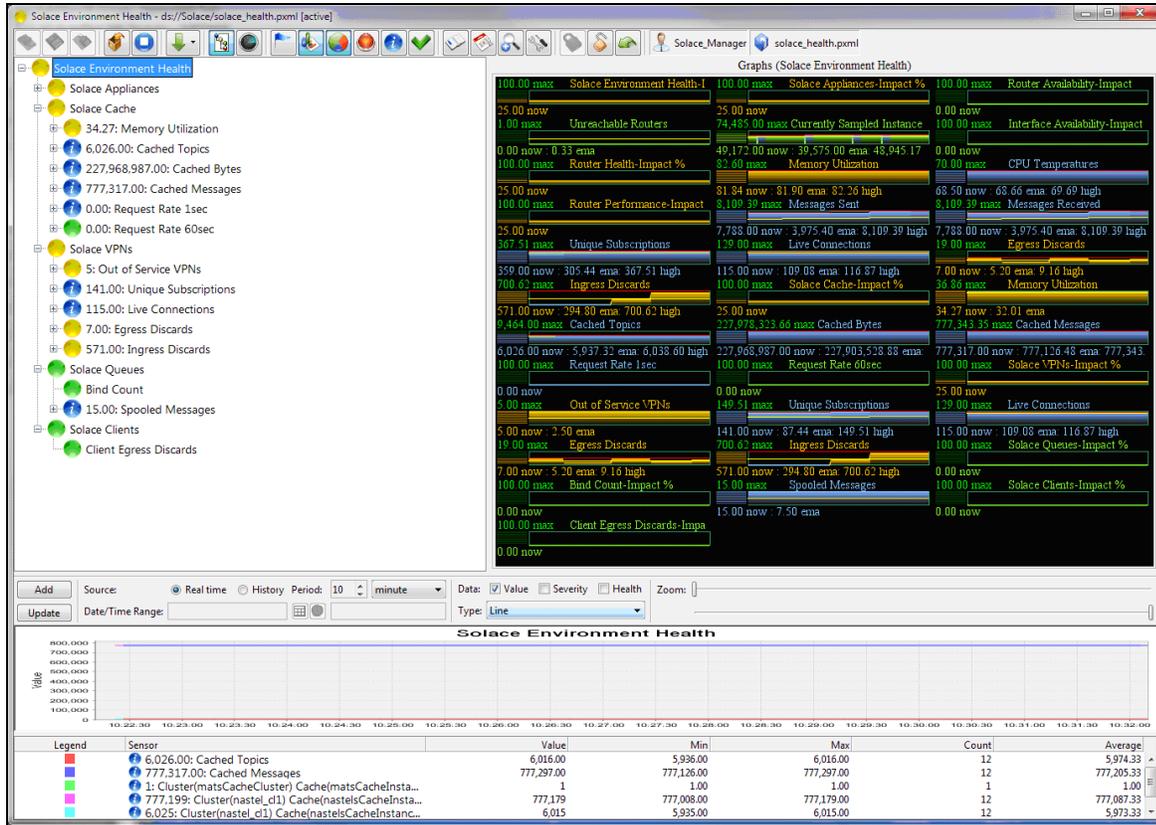


Figure 6-2. Sample Health Business View

The Solace business view can be deployed in the same way as all business views. See the *AutoPilot M6 User's Guide*, Chapter 4 for details about customizing and deploying business views.

Appendix A: References

A.1 Nastel Documentation

The following table provides a list of reference information required for using the AutoPilot M6 Plug-in for Solace.

Table A-1. Nastel Documentation	
Document Number (or higher)	Title
M6/INS 625.001	<i>Nastel AutoPilot M6 Installation Guide</i>
M6/USR 625.001	<i>Nastel AutoPilot M6 User's Guide</i>

A.2 Other Documentation

The following table provides a list of reference information for Solace. Solace documentation is available from Solace Systems, Inc.

Table A-2. Other Documentation	
Document Number	Title
SSPMBUS0EA	<i>Message Bus Management, Solace Messaging Platform, Solace 3260 Router, Solace 3230 Router</i>

This page intentionally left blank.

Appendix B: Conventions

B.1 Typographical Conventions

Table B-1. Typographical Conventions	
Convention	Description
Blue/Underlined	Used to identify links to referenced material or websites. Example: support@nastel.com
Bold Print	Used to identify topical headings, glossary entries, and toggles or buttons used in procedural steps. Example: Click EXIT .
<i>Italic Print</i>	Used to identify titles, menus, screen names, user inputs, or other category.
Monospaced Bold	Used to identify keystrokes/data entries, file names, directory names, etc.
<i>Monospaced Italic</i>	Used to identify variables in an address location. Example: [<i>AUTOPILOT_HOME</i>]\documents, where the portion of the address within the brackets [] are variable.
Monospaced Text	Used to identify addresses, commands, scripts, etc.
Normal Text	Typically used for general text throughout the document.
Table Text	Table text is generally a smaller size to conserve space.

This page intentionally left blank.

Glossary

Application: A logical collection of software components that perform a business function, running on a specific server.

AutoPilot M6: Nastel Technologies' Enterprise Application Management Platform. AutoPilot M6 is designed to monitor and control distributed IT services such as application servers, middleware, user applications, workflow engines, brokers, Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB) based applications and their impact on business services.

AutoPilot M6 for WMQ: Nastel Technologies' WebSphere MQ management solution. Re-designated as M6 for WMQ with release 6.0, prior releases retain the AP-WMQ or MQControl trademark.

AutoPilot M6 Web: AutoPilot M6 Web is a browser-based interface that provides monitoring and operational control over managed resources and applications. It allows users to monitor health, recover from a failure, view historical performance graphs and visualize impacts of a failure.

AutoPilot M6/WebSphere Message Queue Integrator (AP/WMQI): Formerly AP/MQSI

AutoPilot/Message Tracking (AP/MT): Nastel's AutoPilot/Message Tracking plug-in that enables AutoPilot/IT to intercept message exits and forward the statistical data to an AutoPilot expert.

AutoPilot TransactionWorks (AP/TW): Nastel Technologies' transaction and application performance monitoring product.

AutoPilot/WebSphere (AP/WS): AutoPilot/WebSphere plug-in enables AutoPilot to monitor and manage eBusiness applications for continuous operations in addition to its standard features.

BCI: *See* Byte Code Instrumentation

Binary Large Object (BLOB): A collection of binary data stored as a single entity in a database management system. Blobs are typically images, audio or other multimedia objects, though sometimes binary executable code is stored as a blob. Database support for blobs is not universal.

BLOB: *See* Binary Large Object.

BSV: *See* Business View.

Business Transaction: A collection of related transactions that comprise a user-defined business function (e.g. purchase a book, return merchandise, purchase stock). Each of the business activities may be comprised of various workloads.

Business View (BSV): A collection of rules that define a desired state of an eBusiness environment. Business Views can be tailored to present information in the form most suited to a given user, as defined by the user.

Byte Code Instrumentation (BCI): The process of adding small portions of Java byte code around methods of a Java class. The added code performs tasks such as time spent or CPU utilization within the monitored class.

CEP (Complex Event Processing) Server: A container that can host any number of AutoPilot services such as experts, managers, policies, etc. (Called managed node prior to AutoPilot M6 Service Update 6.)

Client: Any programming component that uses the AutoPilot infrastructure; for example, the AutoPilot Console.

Common Object Request Broker Architecture (CORBA): A standard defined by the Object Management Group that enables software components written in multiple computer languages and running on multiple computers to work together. It can be invoked from a Web browser using CGI scripts or applets.

Composite Application: A collection of applications that collaborate or communicate with each other (have related sessions).

Console: The console acts as the graphical interface for AutoPilot.

Contacts: A subordinate to a given Manager or Expert.

CORBA: *See* Common Object Request Broker Architecture.

Data Source Name (DSN): The logical name that is used by Open Database Connectivity (ODBC) to refer to the drive and other information that is required to access data. The name is used by Internet Information Services (IIS) for a connection to an ODBC data source, (Example: Microsoft SQL Server database). The ODBC tool in Control Panel is used to set the DSN. When ODBC DSN entries are used to store the connection string values externally, you simplify the information that is needed in the connection string. This makes changes to the data source completely transparent to the code itself.

Data Space: A range of up to two gigabytes of contiguous virtual storage addresses that a program can directly manipulate. Unlike an address space, a data space can hold only data; it does not contain common areas or system data or programs.

Decision Support System (DSS): An AutoPilot-based service designed to monitor, store, and display any event information generated by AutoPilot enabled middleware and applications.

Deploy: To put to use, to position for use or action.

Domain Server: A specialized managed node that maintains the directory of managed nodes, experts etc. The domain server is also capable of hosting experts, managers etc

DSN: *See* Data Source Name.

DSS: *See* Decision Support System.

Event: An *Event* is something that happens to an object. Events are logged by AutoPilot and are available for use by AutoPilot Policies or the user.

EVT: Event Log file extension (for example: `sample.evt`).

Expert: Services that monitor specific applications such as an applications server, Web server or specific components within the applications (example, channels in MQSeries). Experts generate facts.

Fact: Single pieces of data that has a unique name and value. One or more facts are used to determine the health of the object, application or server.

Graphical User Interface (GUI): A type of environment that represents programs, files, and options by means of icons, menus, and dialog boxes on the screen. The user can select and activate these options by pointing and clicking with a mouse or, often, with the keyboard. Because the graphical user interface provides standard software routines to handle these elements and report the user's actions (such as a mouse click on a particular icon or at a particular location in text, or a key press); applications call these routines with specific parameters rather than attempting to reproduce them from scratch.

GUI: *See* Graphical User Interface.

HAQS: *See* High Availability Queuing Service.

Heap: In Java programming, a block of memory that the Java virtual machine uses at run time to store Java objects. Java heap memory is managed by a garbage collector, which automatically de-allocates Java objects that are no longer in use

High Availability Queuing Service (HAQS): A component of AutoPilot consisting of two policies that provide automatic queue fail-over for WebSphere MQ applications, provide high availability of WebSphere MQ resources such as queues and channels, and ensure automatic recovery of WebSphere MQ channels.

IIS: *See* Internet Information Services.

Independent Software Vendor (ISV): A business term for companies specializing in making or selling software, usually for niche markets.

Initial Program Load (IPL): The process of loading system programs and preparing a system to run applications.

Interactive System Productivity Facility (ISPF): An IBM licensed program that serves as a full-screen editor and dialog manager. Used for writing application programs. It provides a means of generating standard screen panels and interactive dialogues between the application programmer and terminal user.

Internet Information Services (IIS): Microsoft's brand of Web server software, utilizing HTTP to deliver World Wide Web documents. It incorporates various functions for security, allows CGI programs, and also provides for Gopher and FTP services.

IPL: *See* Initial Program Load.

ISPF: *See* Interactive System Productivity Facility.

ISV: *See* Independent Software Vendor.

Java: A platform-independent, object-oriented programming language developed and made available by Sun Microsystems.

Java Database Connectivity (JDBC): Provides universal data access from the Java programming language. Using the JDBC 2.0 API, you can access virtually any data source, from relational databases to spreadsheets and flat files. JDBC technology also provides a common base on which tools and alternate interfaces can be built. The *JDBC Test Tool* that was developed by Merant and Sun Microsystems may be used to test drivers, to demonstrate executing queries and getting results, and to teach programmers about the JDBC API.

Java Developer's Kit (JDK): A set of software tools developed by Sun Microsystems, Inc., for writing Java applets or applications. The kit, which is distributed free, includes a Java compiler, interpreter, debugger, viewer for applets, and documentation.

Java Management Extensions (JMX): An open technology for management and monitoring that can be deployed wherever management and monitoring are needed. By design, this standard is suitable for adapting legacy systems, implementing new management and monitoring solutions and plugging into those of the future.

Java Messaging Service (JMS): a Java Message Oriented Middleware API for sending messages between two or more clients.

Java Platform, Enterprise Edition (Java EE): The industry standard for developing portable, robust, scalable and secure server-side Java applications. Building on the solid foundation of Java SE, Java EE provides Web services, component model, management, and communications APIs that make it the industry standard for implementing enterprise class service-oriented architecture (SOA) and Web 2.0 applications.

Java Naming and Directory Interface (JNDI): Unified interface to multiple naming and directory services for applications based on Java technology.

Java Run-time Environment (JRE): The minimum core Java required to run Java programs.

Java Server Pages (JSP): Technology that enables rapid development of Web-based applications that are platform independent. Java Server Pages technology separates the user interface from content generation enabling designers to change the overall page layout without altering the underlying dynamic content. Java Server Pages technology is an extension of the Java Servlet technology.

Java Virtual Machine (JVM): The “virtual” operating system that Java-written programs run. The JVM is a hardware- and operating system-independent abstract computing machine and execution environment. Java programs execute in the JVM where they are protected from malicious programs and have a small compiled footprint.

JCL: *See* Job Control Language.

JDBC: *See* Java Database Connectivity.

JDK: *See* Java Developer's Kit.

JMS: *See* Java Messaging Service.

JMX: *See* Java Management Extensions.

JNDI: *See* Java Naming and Directory Interface.

Job Control Language (JCL): A control language that is used to identify a job to an operating system and to describe the job's requirements.

JRE: *See* Java Run-time Environment.

JSP: *See* Java Server Pages.

JVM: *See* Java Virtual Machine.

Logical Unit of Work (LUW): A collection of operations and messages within a session that should be considered to be a single unit of work (all or nothing property). These are generally delimited by BEGIN/COMMIT calls.

LUW: *See* Logical Unit of Work.

Managed Node: Containers that are capable of hosting any number of AutoPilot services, such as experts, managers, policies etc.

Manager: Managers are the home or container for policies. All business views must reside on managers, and manager must be deployed prior to deploying a business view or policy.

Message: A physical message being transported through the TPN.

Message-Oriented Middleware (MOM): A category of inter-application communication software that relies on asynchronous message passing as opposed to a request/response metaphor.

Message Queue Interface (MQI): Part of IBM's Networking Blueprint. It is a method of program-to-program communication suitable for connecting independent and potentially non-concurrent distributed applications.

MOM: *See* Message-Oriented Middleware.

MQI: *See* Message Queue Interface.

MQSeries: IBM's message queuing product. Renamed by IBM as WebSphere MQ.

Naming Service: A common server records "names" of objects and associates them with references, locations and properties.

Object Request Broker (ORB): In object-oriented programming, software that serves as an intermediary by transparently enabling objects to exchange requests and responses.

ORB: *See* Object Request Broker.

Orbix: CORBA product distributed by IONA Technologies.

Package Manager: The command line utility that allows users to list, install, uninstall, verify, and update AutoPilot installation on any Managed Node.

PKGMAN: *See* Package Manager Utility included in AutoPilot products.

Policy/Business Views: A collection of one or more sensors. Business views are used to visually present the health and status of the different systems as well as automatically issue remedial actions.

Resource: An entity on which transactions are executed or a medium of exchange. Examples include queue, DB table, file, JMS topic.

Resource Manager: An entity that is managing a collection of resources. Examples include a WMQ Queue Manager, Application Server, Database Server.

Sensor: A rule that is used to determine the health of an object or application based on one or more facts. Actions can then be issued, based on the health.

Server: A physical or virtual node within a TPN that hosts all transaction processing activity.

Service Level Agreement (SLA): A formal written agreement made between two parties: the service provider and the service recipient. The SLA itself defines the basis of understanding between the two parties for delivery of the service itself. The document can be quite complex, and sometimes underpins a formal contract. The contents will vary according to the nature of the service itself, but usually includes a number of core elements, or clauses.

Service-Oriented Architecture (SOA): An evolution of distributed computing and modular programming. SOAs build applications out of software services. Services are relatively large, intrinsically unassociated units of functionality, which have no calls to each other embedded in them. They typically implement functionalities most humans would recognize as a service, such as filling out an online application for an account, viewing an online bank statement, or placing an online book or airline ticket order. Instead of services embedding calls to each other in their source code, protocols are defined which describe how one or more services can talk to each other. This architecture then relies on a business process expert to link and sequence services, in a process known as orchestration, to meet a new or existing business system requirement.

Session: A specific period of execution of an application. Examples include the interval during which a database or queue manager connection is active.

Simple Mail Transfer Protocol (SMTP): A TCP/IP protocol for sending messages from one computer to another on a network. This protocol is used on the Internet to route e-mail. *See also* communications protocol, TCP/IP.

SLA: *See* Service Level Agreement.

SMTP: *See* Simple Mail Transfer Protocol.

SOA: *See* Service-Oriented Architecture.

TCP/IP: *See* Transmission Control Protocol/Internet Protocol.

Time Sharing Option (TSO): An option of the MVS operating system that provides interactive time sharing from remote terminals.

TPN: *See* Transaction Processing Network.

Transaction: A group of activities targeted at achieving a common goal or a task. Collection of related sessions and LUWs.

Transmission Control Protocol/Internet Protocol (TCP/IP): A protocol developed by the Department of Defense for communications between computers. It is built into the UNIX system and has become the de facto standard for data transmission over networks, including the Internet.

Transaction Processing Network (TPN): A collection of servers engaged in transaction processing activity

TSO: *See* Time Sharing Option.

Virtual Machine: Software that mimics the performance of a hardware device, such as a program that allows applications written for an Intel processor to be run on a Motorola chip. *Also see* Java Virtual Machine.

WebLogic: A Java EE compatible application server platform which enables support for multiple programming models, which includes advanced administration tools and is the ideal foundation for Service Oriented Architecture (SOA).

WebSphere MQ: IBM's message queuing product, formally known as MQSeries.

Websphere_MQ_Manager: A specialized manager capable of hosting one or more WebSphere MQ specific policies, apart from the regular policies.

Wireless Application Protocol (WAP): An open global specification that is used by most mobile telephone manufacturers. WAP determines how wireless devices utilize Internet content and other services. WAP enables devices to link diverse systems contents and controls.

Write to Operator (WTO): An optional user-coded service that allows a message to be written to the system console operator informing the operator of errors and unusual system conditions that may need to be corrected.

WTO: *See* Write to Operator.

This page intentionally left blank.

Index

B

business view 33

C

ComponentsExpert 3

CustomQuery Error 4

CustomQueryExpert 3

D

data collection

 appliance data 29

 appliance data collected from VPN 29

 cache data 30

 client data 30

 hardware data 31

 message spool data 32

 queue data 31

 VPN data 32

deploy expert 16

document history 1

E

EventsExpert 5

expert properties

 About 18

 Dependencies 19

 Fact Options 20

 General 17

 Logging 21

 Other 25

Recording 22

Restart-Recovery 23

Security 24

F

feedback, user 2

I

installation

 from command prompt 9

 from Windows 11

 recommendations 7

M

migrating to V2.4.5 8

R

README files 2

Resource Center 2

S

Solace router

 adding 13

 editing 15

 removing 15

support@nastel.com 2

Syslog listener 26

T

technical support 2

This page intentionally left blank.