



## Gateways Installation Note

**TIVOLI® NETCOOL® GATEWAY FRAMEWORK  
GATEWAYS INSTALLATION NOTE**

---

---

**Note:** Before using this information and the product it supports, read the information in Notices on page 16.

This edition applies to Version 3.5 of IBM® Tivoli® Netcool® Gateway Framework and to all subsequent releases and modifications until otherwise indicated in new editions.

© Copyright International Business Machines Corporation, 2010. All rights reserved.

US Government Users Restricted Rights - Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

# Table of Contents

<b>1</b>	<b>About this Documentation</b> .....	<b>4</b>
1.1	Audience .....	4
1.2	Required Skills and Knowledge .....	4
<b>2</b>	<b>Introduction</b> .....	<b>5</b>
2.1	Prerequisites .....	5
<b>3</b>	<b>Gateway Package Naming Convention</b> .....	<b>6</b>
<b>4</b>	<b>Installation Procedure</b> .....	<b>7</b>
4.1	Gateway Framework Installation.....	7
4.2	Vendor Gateway Installation .....	7
4.3	Gateway Configuration Installation .....	8
<b>5</b>	<b>Installation layout</b> .....	<b>9</b>
5.1	Gateway Framework layout .....	9
5.2	Vendor Gateway layout.....	10
5.3	Gateway Configuration layout .....	10
<b>6</b>	<b>Post-Installation Procedure</b> .....	<b>11</b>
<b>7</b>	<b>Upgrade Procedures</b> .....	<b>12</b>
7.1	Software Requirement .....	12
7.2	New Configuration Structure.....	12
7.3	Configuration of properties file .....	13
<b>8</b>	<b>Running Gateway</b> .....	<b>14</b>
<b>9</b>	<b>Associated Tasks</b> .....	<b>14</b>
<b>10</b>	<b>Removing Gateway Packages</b> .....	<b>15</b>
<b>Appendix A</b>	<b>Notices and Trademarks</b> .....	<b>16</b>

# 1 About this Documentation

## 1.1 Audience

The target audience of this document is IBM Performance Manager for Wireless customers. They should be familiar with telecommunication and IT principles and should also have a good understanding of Solaris.

---

**IMPORTANT:** Before attempting an installation of Performance Manager for Wireless you are strongly advised to read the release notes and any readme files distributed with your Performance Manager for Wireless software. Readme files and release notes may contain information specific to your installation not contained in this guide. Failure to consult readme files and release notes may result in a corrupt, incomplete or failed installation.

---

**Note:** Performance Manager for Wireless Administrators should not, without prior consultation and agreement from IBM, make any changes to the Index Organized tables or database schema. Changes to the Index Organized tables or database schema may result in corruption of data and failure of the Performance Manager for Wireless System. This applies to all releases of Performance Manager for Wireless using all versions of interfaces.

---

## 1.2 Required Skills and Knowledge

This guide assumes you are familiar with the following:

- General IT Principles
- Sun Solaris Operating System
- Oracle Database
- Windows operating systems
- Graphical User Interfaces
- Network Operator's OSS and BSS systems architecture

This guide also assumes that you are familiar with your company's network and with procedures for configuring, monitoring, and solving problems on your network.

## 2 Introduction

This document describes the steps required to install and run a Gateway. The steps described here are generic to all Productised Gateways from version 3.5 and above.

The layout of the Gateways installation was altered at the 3.5 release, and this document only applies to releases from this point.

As well as this document, readers should refer to the following documents before proceeding to install the Gateway:

- the Gateway Configuration Distribution Note
- the appropriate Vendor Gateway Distribution Note
- the Gateway Framework Distribution Note

### 2.1 Prerequisites

The Gateway Framework requires Perl version 5.6.1 installed. Perl is not included with the Gateways package. Download the appropriate Perl version and build Perl on a supported architecture. Refer to the Perl Build Instructions for more details. The following are the supported Perl build architecture for the platforms respectively.

Operatin System Version(s)	Chipset	Perl Build Architecture
HP-UX 10.2 & 11.0	PA-RISC2.0	PA-RISC2.0
Solaris 9 & 10	SPARC	sun4-solaris
Tru64 UNIX 5.0	DEC-ALPHA	alpha-dec_osf
Red Hat Enterprise Linux Server 4 & 5	x86-32, and x86-64	i686-linux
	PPC64	ppc64-linux
AIX 5.3	PPC64	aix

**Note:** x86-64 includes EM64T (Xeon) and AMD64 (Opteron);  
x86-32 is Intel 32-bit and AMD Athlon

## 3 Gateway Package Naming Convention

The Gateway Framework package has the following naming convention:

```
gways-gateway-framework-3.w.x.p.tar.gz
```

A Vendor Gateway package has the following naming convention:

```
gways-<vendor/data>-<network/format>-3.w.y.p.tar.gz
```

e.g.

```
gways-ericsson-gsm-3.5.0.1.tar.gz
```

```
gways-3gpp-xml-3.5.0.1.tar.gz
```

A Gateway Configuration package has the following naming convention:

```
<gways-cfg-techpack-name>-<techpack_version>.tar.gz
```

e.g.

```
gways-cfg-gsm-siemens-nss-sr13-3.4.0.2.tar.gz
```

```
gways-cfg-umts-ericsson-sgsn-r8-1.0.0.1.tar.gz
```

where:

<vendor/data> is the name of the network vendor e.g. nokia, ericsson or standards body data type e.g. xml, asn1

<network/format> is the network e.g. gprs, cdma, or the data format e.g. XML.

The version numbers are described in the table below:

Version Numbers	Description
Major – w	Gateway major release number
Minor – x	Gateway Framework minor release number
Point - y	Vendor Gateway minor release number
Point - p	Patch release number

## 4 Installation Procedure

The installation procedure is broken into 3 stages:

1. Installation of the Gateway Framework,
2. Installation of the Vendor Gateway,
3. Installation of the Gateway Configuration.

Step 1 and 2 only needs to be completed if a version of the Gateway Framework and Vendor Gateway has not already been installed on the server.

Create a Gateways root directory where all the Gateway Framework, Vendor Gateways and Gateway Configurations will be installed. A common name that can be used is “`gways`”. The full path to `gways` must be set for the environment variable `GATEWAY_ROOT`.

**NOTE:** If a package is being redeployed, it is important to remove the previously installed package. Procedures for removing an installed gateway package are defined in a later chapter of this document.

### 4.1 Gateway Framework Installation

Within the `GATEWAY_ROOT` directory, the Gateway Framework is installed in the “`gateway-framework`” directory. This directory will be referenced by all Gateway Configurations. This path will be set for the environment variable `GATEWAY_FRAMEWORK` by default.

1. Uncompress the package:

```
gunzip -c gways-<gateway-framework-r3.w.x.p>.tar.gz | tar xf -
```

2. Install the package:

```
gways-<gateway-framework_r3.w.x.p>.install
```

Please refer to Section 5.1 for the Gateway Framework layout. These directories contain the common modules and functions of the Gateway Framework, and will be referenced by the Gateway Configuration Installation.

### 4.2 Vendor Gateway Installation

The following steps should be undertaken to install a Vendor Gateway. Within the `GATEWAY_ROOT` directory, all Vendor Gateways are installed in the “`modules`” directory with their respective vendor

technology directory name. This directory will be referenced by all Gateway Configurations that requires it. This path will be set for the environment variable `VENDOR_GATEWAY` by default.

1. Uncompress the package:

```
gunzip -c gways-<vendor-gateway-r3.w.y.p>.tar.gz | tar xf -
```

2. Install the package:

```
gways-<vendor-gateway-r3.w.y.p>.install
```

Please refer to Section 5.2 for the Vendor Gateways layout. These directories contain the vendor gateway modules and functions of the Vendor Gateways, and will be referenced by the Gateway Framework start script.

### 4.3 Gateway Configuration Installation

The following steps should be undertaken to install a Gateway Configuration. Within the `GATEWAY_ROOT` directory, the Gateway Configuration is installed in the “`config`” directory with each respective vendor sub-system and release directory. These directories name are a unique for each vendor sub-system and release.

3. Uncompress the package:

```
gunzip -c <gways-cfg-techpack-name>-<techpack_version>.tar.gz | tar xf -
```

4. Install the package:

```
<gways-cfg-techpack-name>-<techpack_version>.install
```

Please refer to Section 5.3 for the Vendor Gateways layout. This directory contains the gateway configuration files of the Gateways Configuration, and will be referenced by the Gateway Framework start script.

For additional configurations of the Gateway Configuration, please follow the instructions in the Gateway Framework User Guide, and the respective Vendor Gateway User Guide for the Gateway Configuration.

If the the `StatisticsConfig.pm` script is configured, then create the `file_statistics` and `block_statistics` directory in the `config` directory.

```
eg.    config/<vendor-subsys>/file_statistics  
       config/<vendor-subsys>/block_statistics
```

## 5 Installation layout

A Gateway installation is split into 3 stages:

- The installation of the Gateway Framework,
- The installation of the Vendor Gateways,
- The installation of the Gateway Configuration, and post installation setup.

This allows a single Gateway Framework and Vendor Gateways installation to be used by multiple Gateway Configuration solutions, with subsequent ease of maintenance and version control.

### 5.1 Gateway Framework layout

Within the Gateway Framework there are 5 subdirectories. None of these directories need to be edited or amended in any way during installation.

These directories and their contents are described below:

1. The `perl_extensions` contains the Gateway Framework modules used by both the Framework and Vendor Gateway.
2. The `parsersrc` directory contains the perl script that controls the Gateway execution.
3. The `example` directory contains examples of configuration files and usage of the Gateway.
4. The `docs` directory contains documentation on the configuration and use of the Gateway Framework.
5. The `vstart` directory contains 4 main files (`EngineConfig.pm`, `UserConfig.pm`, `gateway_start.sh` and `gateway_version.sh`). It can also contain configuration files for each network type of the Gateway.
  - `EngineConfig.pm` is the configuration file of the first stage of the Gateway.
  - `UserConfig.pm` that is a user configurable Perl module for configuring the Gateway Post Parser.
  - `TransferConfig.pm` that can be used to configure the transfer in of raw files, and transfer out of processed LIF files.
  - The `gateway_start.sh` script that is used to start the Gateway.

## 5.2 Vendor Gateway layout

Within the Vendor Gateway there are 4 subdirectories. They will be contained within a directory called `modules`. None of these directories need to be edited or amended in any way during installation.

These directories and their contents are described below:

1. The `parsersrc` directory contains the parser modules for the Vendor Gateway, which contains the specific functionality to parse the specific format of the vendor's data. You should NOT change anything under this directory.
2. The `docs` directory contains documentation on the configuration and use of the Vendor Gateway and its specific Post Parser rules.
3. The `perl_extensions` contains the compiled libraries of any Vendor Gateway modules which require them.
4. The `vstart` directory may contain a combination of default configuration files specific to the Vendor Gateway. (e.g. `EngineConfig.pm`, `UserConfig.pm`, `StatisticsConfig.pm`, `TransferConfig.pm`). The `StatisticsConfig.pm` and `TransferConfig.pm` file can be obtained from the gateway framework example directory.

## 5.3 Gateway Configuration layout

Within the Gateway Configuration there are configuration directories specific for every vendor sub-system and data revision. They will be contained within a directory called `config`. The contents of these are described below

1. The `docs` directory contains documentation on the configuration for each vendor data revision supported.
2. The configuration directories are named based on the vendor sub-system, e.g. `ericsson-bss`. Within each vendor sub-system directory contains the directories for each data revision supported, e.g. `r12_ascii`, `r12_asn1`. These directories contain the configuration files that are to be referenced by the Gateway Framework to parse the vendor data accordingly. (e.g. `EngineConfig.pm`, `UserConfig.pm`, `StatisticsConfig.pm`, `TransferConfig.pm`, `NotificationConfig.pm`). The `StatisticsConfig.pm`, `TransferConfig.pm` and `NotificationConfig.pm` file can be obtained from the gateway framework `example` directory.
3. If the Statistics Configuration is configured, the `file_statistics` and `block_statistics` directory must be created manually by the user, and the path specified in the `StatisticsConfig.pm`.

## 6 Post-Installation Procedure

Create the spool directories for input files, intermediate files, and loader files. Set the directories accordingly in the `properties` file for the variables below:

```
IN_DIR=./spool/input_d
INT_DIR=./spool/inter_d
OUT_DIR=./spool/output_d
```

The `properties` file must exist within the Gateway Configuration release directory and updated accordingly. A copy of the `properties` file is available within the `vstart` directory of the Gateway Framework as a template.

Set the following environment variables accordingly.

- **GATEWAY\_ROOT**: the base path to where all Gateway components have been installed

```
GATEWAY_ROOT=${WMCROOT}/gways
```

- **TZ**: the time zone as defined in RFC 822

```
Universal:  GMT, UT
US zones  :  EST, EDT, CST, CDT, MST, MDT, PST, PDT
Military  :  A to Z (except J)
Other     :  +HHMM or -HHMM
ISO 8601  :  +HH:MM, +HH, -HH:MM, -HH
```

- **PERL5\_BASE**: the full path to where Perl base is installed, which contains the `bin` and `lib` directories.

```
PERL5_BASE=/usr
```

- **PERL5**: the path of the `perl` command, which is commonly in the `bin` directory of **PERL5\_BASE**. Please set it if otherwise.

```
PERL5=${PERL5_BASE}/bin/perl
```

Create the `file_statistics` and `block_statistics` directories within the `vendor-subsys` directory if the `StatisticsConfig.pm` is configured for the Gateway Configuration.

To enable notification for monitoring services, copy the `NotificationConfig.pm` from the Gateway Framework example directory and edit it return the relevant array rule for the respective monitoring service, i.e. either `@rules_NPR`, `@rules_MPM`, or `@rules_ITM`.

## 7 Upgrade Procedures

All Gateway Configurations that was previously configured for the Gateway release 3.3.1 and earlier must be migrated into the configuration structure for Gateway release 3.4 in order to be compatible with Gateway Framework 3.5.

### 7.1 Software Requirement

Gateway release 3.5 requires Perl version 5.6.1. Please refer to the Perl Build Instruction to compile and install Perl on your system.

### 7.2 New Configuration Structure

The new directory structure for the Gateway Configurations for Gateway release 3.4 and above is as follow:

```
$GATEWAY_ROOT
|-gateway-framework
|-modules
|  |-<vendor-gateways>
|-config
  |-<vendor-subsys>
    |-<data_version>
```

The following steps describe the procedures to upgrade Gateway configurations from Gateway release 3.3.1 and below into 3.4:

1. Create the new configuration directory for the Gateway configurations within the `GATEWAY_ROOT` directory:  
`$GATEWAY_ROOT/config/<vendor-subsys>/<data_version>`
2. Copy the properties and configuration files from the old Gateway configuration into the new directory above, except for `gateway_start.sh`, `gateway_version.sh`, `cpan_check.pm` and `cpan_list`.
3. Update the `properties` file to include the log level and log filename in the following environment variables:

```
LOG_LEVEL=5
LOG_FILE=</log_path/log_filename>
```

These variables were defined in the old Gateway configurations `gateway_start.sh`.

### 7.3 Configuration of properties file

New environment variables are required in the `properties` file for each Gateway Configuration migrated from Gateway 3.4 and earlier. Below is the list of variables new in Gateway 3.5:

- `LOG_LEVEL` - specifies the log level which was previously defined in `gateway_start.sh`.
- `LOG_FILE` - specifies the path and file name of the log file which was previously defined in `gateway_start.sh`.
- `MAX_NUMBER_OF_PROCESSES` - specifies the number of Gateway processes allowed to be spawned for multiple independent blocks configured in the `UserConfig.pm`. By default this variable should be set to 1.

## 8 Running Gateway

To start the Gateway, run `gateway_start.sh` within the Gateway Framework `vstart` directory by passing in the Vendor Sub-system and Release of the vendor data as arguments:

```
gateway_start.sh -vendor <vendor-subsys> -release <data_version>
```

where:

`<vendor-subsys>` The Vendor and Subsystem, e.g. 'ericsson-bss'. The name coincides with the Gateway Configuration directory name.

`<data_version>` The data version for the Vendor Subsystem, e.g. 'r12\_ascii'.  
The name coincides with the Gateway Configuration vendor release directory name.

Configure the crontab file for the `gateway_start.sh` command as above so that the Gateway runs at the required frequency.

## 9 Associated Tasks

House keeping scripts should be configured to remove '.bad' files from the input, intermediate and output directories, after these files have been there for a certain amount of time.

## 10 Removing Gateway Packages

The Gateway package removal scripts are typically found in the Tivoli Netcool Performance Manager for Wireless' Administration sub-directory for gateways:

```
${WMCROOT}/admin/software/gateways/
```

To remove a specific Gateway package, locate and run the `<gateway_package>.remove` script.

```
${WMCROOT}/admin/software/gateways/<gateway_package>.remove
```

Where `<gateway_package>` is the name of the gateway component package to be removed. The gateway package naming convention is outlined in a previous section.

For example, the following scripts are used:

- To remove the Gateway Framework package  
`gways-gateway-framework.remove`
- To remove a Vendor Gateway package such as 3gpp-xml  
`gways-3gpp-xml.remove`
- To remove a Gateway Configuration package such as siemens-bss  
`gways-cfg-siemens-bss.remove`

## Appendix A Notices and Trademarks

This appendix contains the following:

- Notices
- Trademarks

### **Notices**

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk NY 10504-1785  
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation  
Licensing  
2-31 Roppongi 3-chome  
Minato-ku  
Tokyo 106-0032  
Japan.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some

states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation  
5300 Cork Airport Business Park  
Kinsale Road  
Cork  
Ireland.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

***Trademarks***

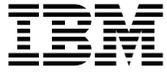
IBM, IBM logo, Tivoli, and Netcool are trademarks of International Business Machines Corporation in the United States, other countries or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Other company, product or service names may be trademarks or service marks of others.





© Copyright IBM Corporation 2010

International Business Machines Corporation  
5300 Cork Airport  
Business Park  
Kinsale Road  
Cork  
Ireland

Printed in the Republic of Ireland  
All Rights Reserved  
IBM, IBM logo, Tivoli, and Netcool are trademarks of  
International Business Machines Corporation in the  
United States, other countries or both.

Other company, product and service names may be  
trademarks or service marks of others.