

IBM Tivoli Netcool Performance Manager
Wireless Component

Gateway Framework

Installation Note

Version 3.5.1

Document Revision : FP6



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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.

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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.

Operating 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 and AIX 6.1	PPC64	aix

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

Executing Gateway Framework on AIX machine may be completed with coredump. This happened due to the AIX's XCOFF address-space model. The number of data segments that a process is allowed to use limits the process memory size. The default number of data segments is one, with size of 256 MB. To resolve the issue, user can defines additional data segment up to a maximum of 8 segments. This is controlled by the LDR_CNTRL environment variable.

The following set additional 4 data segments to a limit of 1.25 GB. :

```
export LDR_CNTRL=MAXDATA=0x40000000
```

3 Gateway Package Naming Convention

The Gateway Framework package has the following naming convention:

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

e.g.

gways-gateway-framework-3.5.1.9.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, asnl

<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

NOTE: Older Gateway Configuration packages will have valleng-vt- prefix before <gways-cfg-techpack-name>

4 Installation Procedure

Refer to TNPMW Installation Guide for more details on the standard installation of Gateway Framework. This Installation Note describes the installation of Gateway Framework separately from the TNPMW core installation.

Note : The *deploy_gateways* will check for previously installed gateways, and will be terminated if there is any existing installation. Run the *sw_version* to check for any existing installation.

It is recommended to backup the current installation prior to install a new version, and user is expected remove existing installation as described in Chapter 10 : Removing Gateway Packages.

The gateways are installed in *\$WMCROOT/gways*. To install the gateways, copy the EPM packages to a directory of your choice. In the example below the directory */appl* is used.

1. Execute the following commands as user *virtuo*:

```
cd /appl/virtuo/admin/common/install/scripts
./deploy_gateways -pkgdir /appl/software/gateways -gateways gways-
gateway-framework-3.5.1.9.tar.gz
```

The *deploy_gateways* script searches the location you specify for files of the form *gways-gateway-framework-*.tar.gz*. If you do not specify a directory, it searches in the current directory. If no file names matching this pattern are found, it looks for files that match the pattern *vallent-vt-gway*.tar.gz*.

Note: If you want to install gateways other than the standard ones, run *deploy_gateways* as follows:

```
cd /appl/virtuo/admin/common/install/scripts
./deploy_gateways -pkgdir <path_to_gateway_installers> -gateways <gw1>,<gw2>,...
where <gw1>,<gw2>,... is a comma-separated list of gateway packages.
```

For example :

```
cd /appl/virtuo/admin/common/install/scripts
./deploy_gateways -pkgdir /appl/virtuo -gateways gways-gateway-framework-3.5.1.10.tar.gz,
gways-3gpp-xml-3.5.1.2.tar.gz
```

2. At the prompt, enter *yes* to deploy the packages.

```
Checking packages: /appl/software/gateways/gways-gateway-
framework-3.5.1.9.tar.gz
Verified the following packages:
* /appl/software/gateways/gways-gateway-framework-3.5.1.9.tar.gz
Do you want to deploy the packages? [yes/no] >yes
Installing
gways-gateway-framework-3.5.1.9.tar.gz ... ok
All packages installed successfully
Creating gateway log directory: /appl/virtuo/logs/gways
Details in pmw_install.log
```

For installation error messages, see the *\$WMCROOT/admin/logs/pmw_install.log* log file.

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` only exists for certain Vendor Gateways. It 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

6.1 Gateway Framework

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
```

6.2 Gateway Configuration

The Gateway Framework will make use of properties file for its operation. This file must exist within the Gateway Configuration release directory and updated accordingly, for example :

```
$GATEWAY_ROOT/config/siemens-bss/br10/properties
```

where siemens-bss is the vendor and br10 is the release version. A copy of properties file is available within \$GATEWAY_ROOT/gateway-framework/vstart directory as a template.

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
```

Note : It is recommended that the spool directories are separated from the main installation directory to avoid memory issue as spool directories grow. The above example assumes that *spool* directory is created from *root* directory.

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 accordingly.

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
```

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This appendix contains the following:

- Notices
- Trademarks

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