

Advanced Configuration Management IPWorks User Guide

USER GUIDE

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1 Introduction

This document describes how to execute a quick IPWorks configuration duplicating from the configured source site to target site which has initialized IPWorks configuration.

The document is available on DNS/ASDNS, ENUM, AAA Diameter, and AAA Radius services in IPWorks. Other services and scenarios are out of the scope.

1.1 Prerequisites

This section describes the prerequisites which must be fulfilled before IPWorks advanced configuration.

The user must have the following capabilities and access rights:

- Basic system administrator level knowledge of the IPWorks parameters.
- Knowledge on how to work in a UNIX®/Linux®, terminal-based, network environment.
- Familiarity with the Parameter Data Base (PDB) tool. For more information , refer to *PDB User Guide*.
- Familiarity with the Ericsson NETCONF Browser (ENB) tool. For more information, refer to *Ericsson NETCONF Browser User Guide*.

1.1.1 Documents

Ensure that the following documents have been read and understood and are accessible during the configuration:

- *Ericsson NETCONF Browser User Guide*
- *PDB User Guide*
- *IPWorks Configuration Management*

1.1.2 Tools

Before the IPWorks advanced configuration executes, a computer meeting the following requirements is needed:

- Network access to the PDB server, or support of the Parameter Database Command-Line Interface (PDBCLI) or the Parameter Database Graphical User Interface (PDBGUI) for the preparation of the configuration package.



- Network access to the Ericsson NETCONF Browser.
- IPWorks NETCONF has been configured in Source Site.

This document describes the procedure of IPWorks advanced configuration used PDBGUI. For more information, refer to *PDB User Guide*.

1.1.3 Configuration Environments

Before starting the procedure of IPWorks advanced configuration, ensure that the following information is available:

- IPWorks has been configured in source site and IPWorks has initial configured in target site.
- User can access the source site and target site.
- IPWorks version is same between the source site and target site.
- Web browser with JAVA support is available on the source site and target site.
- Java is required for script creation from PDB tool to push the configurations through the NETCONF protocol into the Target Site.

Ensure Java Runtime Environment(JRE) is installed. The version of JDK is not below 1.7 and the JRE paths are included in the PATH system variable.

1.1.4 Provided Files

Before starting the procedure of IPWorks advanced configuration, ensure that the following files are stored in [Advanced Configuration Packages](#):

- Relevant IPWorks service filter files. To import the relevant IPWorks service data in the ENB, User can filter the relevant IPWorks service files. The filter file named `IPW_<service>_filter.xml`, such as `IPW_DNS_filter.xml`.
- Variable MPVL files. User can create site-specific list and import corresponding service MPVL file to PDBGUI. The file named `IPW_<service>_MPVL.xml`, such as `IPW_DNS_MPVL.xml`.



2 Advanced configuration procedure

This section describes how to execute a quick IPWorks configuration duplicating from the configured source site to target site which has initialized IPWorks configuration.

The feature scopes include:

- DNS/ASDNS
- ENUM
- AAA Diameter
- AAA Radius

The following tasks will be done during the quick IPWorks configuration duplicating from Source Site to Target Site (see Figure 1):

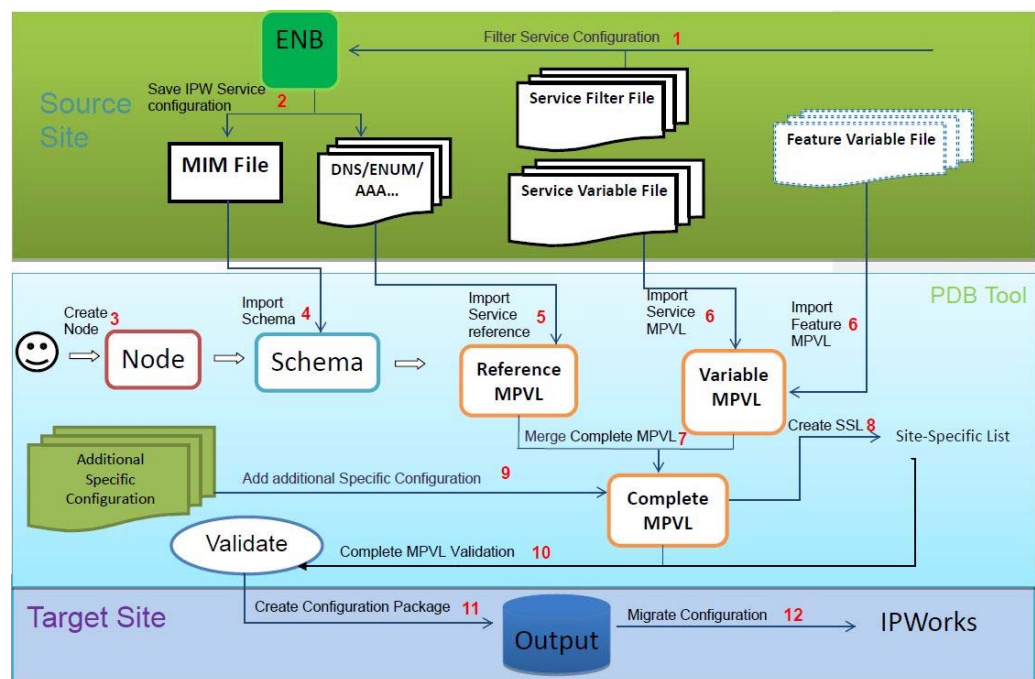


Figure 1 the procedure for quick IPWorks configuration duplicating

The validation reports will be displayed after import of schema files, reference MPVL files, variable MPVL files, and during the configuration package creation.

1. Filtering the relevant IPWorks service configuration
2. Saving IPWorks service configuration



3. Creating a Node
4. Importing a Schema
5. Importing a Reference MPVL
6. Importing a Variable MPVL and Feature MPVL
7. Merging a Complete MPVL
8. Creating a Site-Specific List (SSL)
9. Adding additional specific Configurations
10. Completing MPVL Validation
11. Creating a Configuration Package
12. Migrating Configuration

2.1 Filtering the relevant IPWorks service configuration

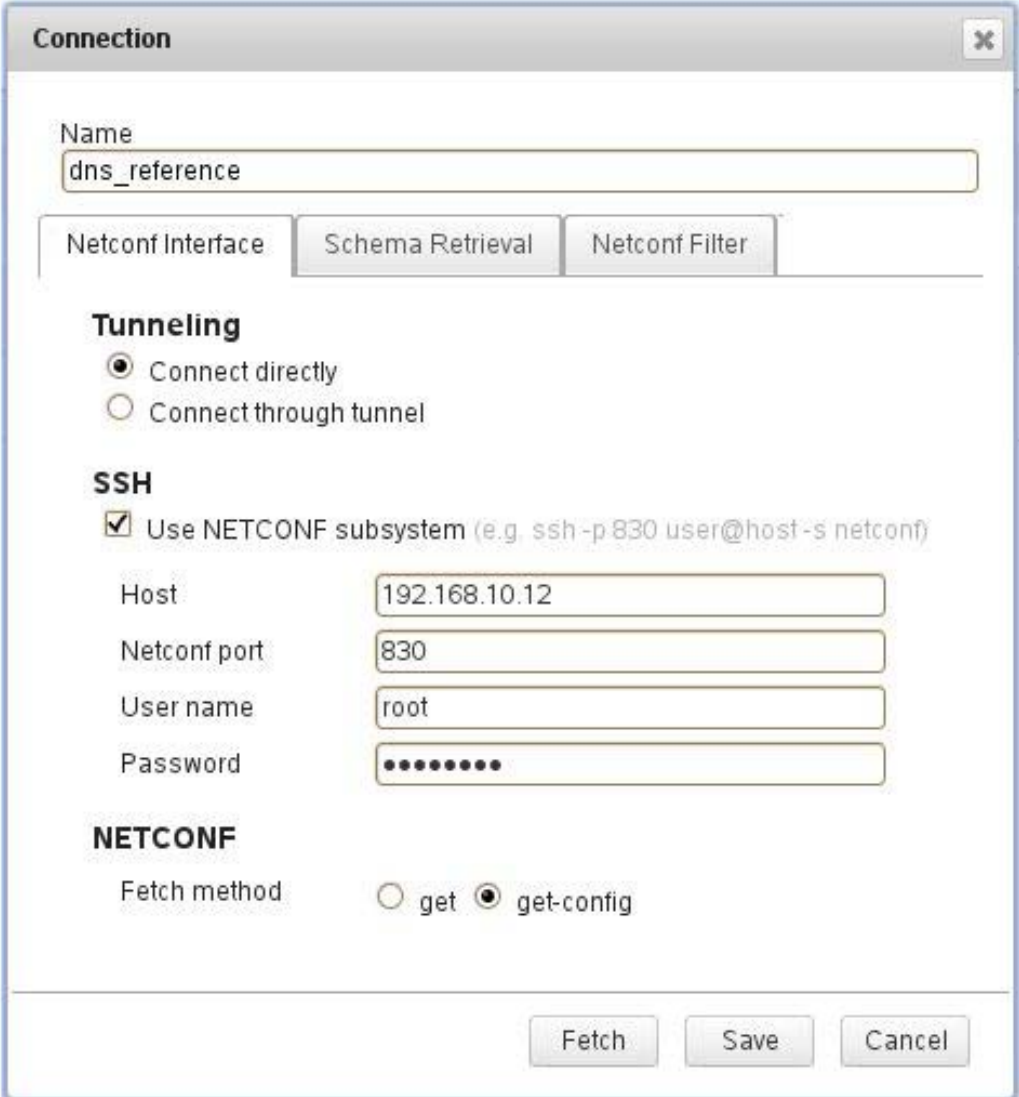
The section describes how to filter the relevant configuration to ENB in Source Site.

For example, to filter the DNS configuration, do:

1. Download DNS configuration `IPWorks_DNS_filter.txt` from [Advanced Configuration Packages](#).
2. Setup the Node Connection in ENB. Refer to the section *Setup the Node Connection* in *Ericsson NETCONF Browser User Guide*.

To setup a node connection:

- In the **Connections** workspace, click **New** connection or press **Ctrl+N**. The Connection dialog box opens on the NETCONF Interface tab. Select “use NETCONF subsystem” in SSH and “select get-config” in **NETCONF** (see figure 2).



The image shows a 'Connection' dialog box with a title bar and a close button. It contains three tabs: 'Netconf Interface' (selected), 'Schema Retrieval', and 'Netconf Filter'. Under 'Netconf Interface', there is a 'Name' field with 'dns_reference' entered. Below the tabs are sections for 'Tunneling' (with radio buttons for 'Connect directly' and 'Connect through tunnel'), 'SSH' (with a checked checkbox for 'Use NETCONF subsystem' and fields for 'Host', 'Netconf port', 'User name', and 'Password'), and 'NETCONF' (with a 'Fetch method' section containing radio buttons for 'get' and 'get-config'). At the bottom right are 'Fetch', 'Save', and 'Cancel' buttons.

Connection

Name
dns_reference

Netconf Interface Schema Retrieval Netconf Filter

Tunneling

☒ Connect directly
☐ Connect through tunnel

SSH

☒ Use NETCONF subsystem (e.g. ssh -p 830 user@host -s netconf)

Host 192.168.10.12

Netconf port 830

User name root

Password

NETCONF

Fetch method ☐ get ☒ get-config

Fetch Save Cancel

Figure 2 Connection Dialog Box

3. To input the file `filter_IPWorks_DNS.xml`, click **Netconf Filter** (see Figure 3). Refer to the section *Apply a NETCONF Filter* in *Ericsson NETCONF Browser User Guide*.

Connection

Name
dns_reference_1

Netconf Interface Schema Retrieval **Netconf Filter**

```

<ManagedElement>
  <managedElementId>1 </managedElementId>
  <IpworksFunction>
    <ipworksRootId>1 </ipworksRootId>
    <ipworksDnsRoot>
      <ipworksDnsRootId>1 </ipworksDnsRootId>
    </ipworksDnsRoot>
  </IpworksFunction>
</ManagedElement>

```

Fetch Save Cancel

Figure 3 NETCONF Filter Tab

4. Click **Save**.

2.2 Saving IPWorks Service Configuration

The section describes how to save the relevant IPWorks service configuration to ENB in Source Site.

To save configuration, do:

- **Save > Full configuration bundle (with schema files)**

Save the current configuration, to a ZIP archive including the schema files and configuration file.



Note: If save failed, close the other connections and try again.

2.3 Creating a Node

The section describes how to create a Node in PDB.

To create a new Node in PDB, do:

1. In the PDBGUI, select **Nodes** from the menu options on the left.
2. Click **New**.
3. Enter the required information such as: application, product number, platform and default export type.
4. Click **Apply**.

For more information, refer to the section *Defining a New Node* in *PDB User Guide*.

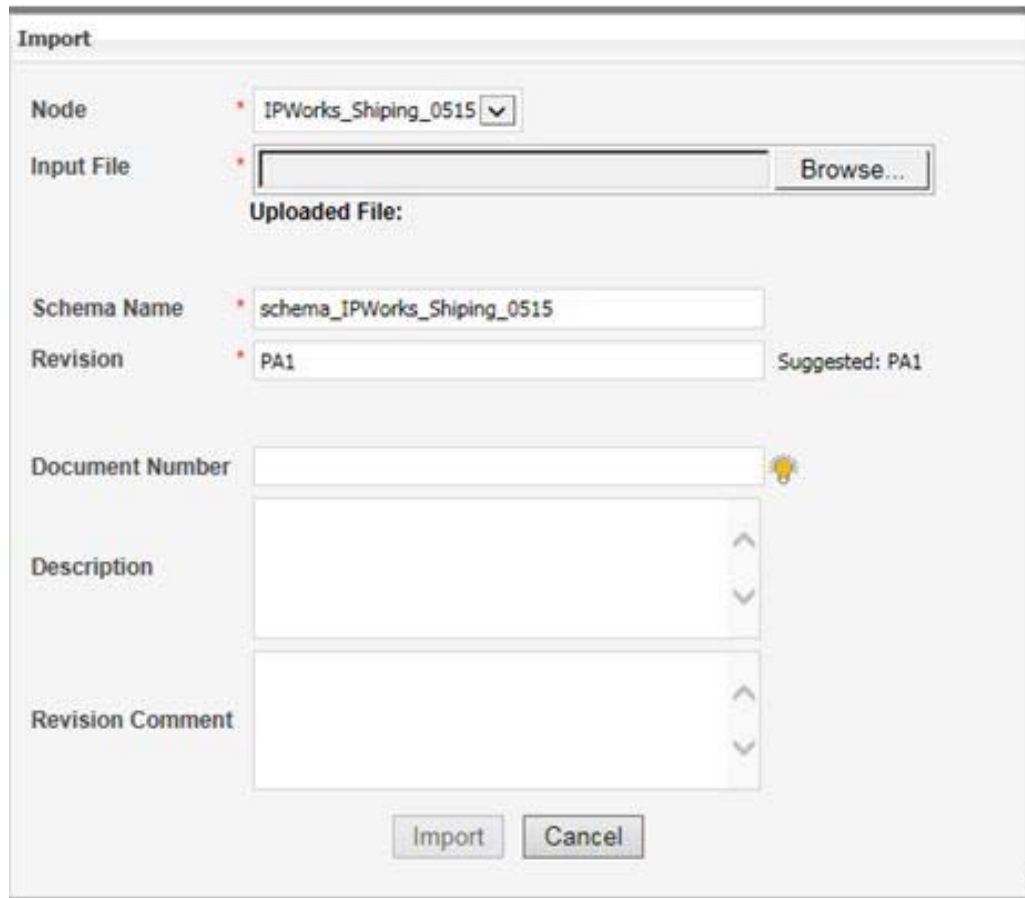
2.4 Importing a Schema

The section describes how to import a schema to PDBGUI.

The Schema ZIP file contains all services schema.

To import a schema, do:

1. Unzip the ZIP archive described in section 2.2. The ZIP files contains a folder named `schemas` and a NETCONF file named `Configuration.xml`.
2. Compress the schemas folder to ZIP format.
3. In the **Schemas** workspace, click **Import**. The **Import Dialog** opens (see Figure 4).
4. Select the node which creates in section 2.3 in the field **Node** and select schema ZIP file created in step 2 in the field **Input File**. Set name and revision in the fields **Schema Name** and **Revision**.
5. Click **Import**.



The screenshot shows the 'Import' dialog box with the following fields and controls:

- Node:** A dropdown menu with 'IPWorks_Shiping_0515' selected.
- Input File:** A text field with a 'Browse...' button to its right.
- Uploaded File:** A label indicating where the file path is displayed.
- Schema Name:** A text field containing 'schema_IPWorks_Shiping_0515'.
- Revision:** A text field containing 'PA1', with a 'Suggested: PA1' label to its right.
- Document Number:** A text field with a lightbulb icon to its right.
- Description:** A large text area with up and down arrow controls on the right side.
- Revision Comment:** A large text area with up and down arrow controls on the right side.
- Buttons:** 'Import' and 'Cancel' buttons at the bottom.

Figure 4 Import Dialog Tab

2.4.1 Schema Validation

The errors and several warnings in validation report can cause advanced IPWorks configuration failure.

- Any error message and missing MIM file cause advanced IPWorks configuration failure.
- The 3 types of following warnings are related to schematron rules, and can be ignored:
 - WARNING | RELATIONSHIP | Only containment relationships are supported, ignoring relationship CustomRule_reservedByRoles_to_CustomRole_rules of type BiDirectionalAssociation.
 - WARNING | ECIM RULES | The attribute 'IMSISeries' should start with a lower case letter according to ECIM rules.



- WARNING | NOT VALID | Shematron rule: 'Bad use of "@" in XPATH assert expression' for 'NetconfTls' class. 'Removing it as a temporary solution.'
- For other types of warnings, if any, must be fixed, refer to section *The Schemas Workspace* in *PDB User Guide*.

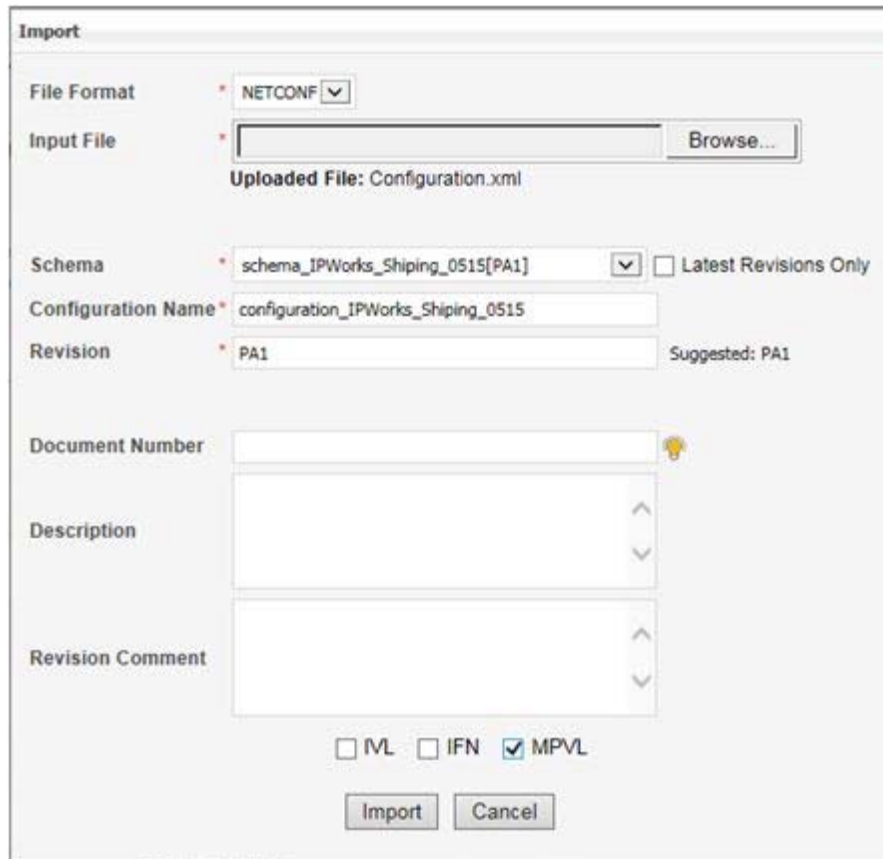
2.5 Importing a Reference MPVL

The section describes how to import a Reference MPVL.

To import a Reference MPVL, do:

1. In the **Configurations** workspace, click **Import** (see Figure 5).
2. Select the **File Format** with “NETCONF” and **Schema** with the schema described in section 2.4.
3. Select the file `Configuration.xml` in Unzip file from ENB in **Input File**.
4. Select the file format “MPVL”.
5. Click **Import**.

Refer to the section *Importing a Node Configuration* in *PDB User Guide*.



The screenshot shows the 'Import' dialog tab with the following fields and options:

- File Format:** A dropdown menu set to 'NETCONF'.
- Input File:** A text field with a 'Browse...' button. Below it, it says 'Uploaded File: Configuration.xml'.
- Schema:** A dropdown menu set to 'schema_IPWorks_Shiping_0515[PA1]'. To its right is a checkbox labeled 'Latest Revisions Only'.
- Configuration Name:** A text field containing 'configuration_IPWorks_Shiping_0515'.
- Revision:** A text field containing 'PA1'. To its right, it says 'Suggested: PA1'.
- Document Number:** A text field with a yellow lightbulb icon to its right.
- Description:** A text area with up and down arrow buttons on its right side.
- Revision Comment:** A text area with up and down arrow buttons on its right side.
- Validation Options:** Three checkboxes: 'IVL' (unchecked), 'IFN' (unchecked), and 'MPVL' (checked).
- Buttons:** 'Import' and 'Cancel' buttons at the bottom.

Figure 5 Import dialog tab

2.5.1 Reference MPVL Validation

PDBGUI automatically validates the syntax of the reference MPVL file and examines the relationship between configuration elements.

The errors and several warnings in validation report can cause advanced IPWorks configuration failure.

- Any error message and missing MIM file cause advanced IPWorks configuration failure.
- Following type of warnings can be ignored:
 - WARNING CARDINALITY | PG | ManagedElement[managedElementId=1],SystemFunctions | Actual cardinality: 0 | Schema constraints: 1-1
- For other types of warnings, if any, must be fixed refer to section 2.5.2.



2.5.2 Modification of reference MPVL

This section describes how to solve the errors and warnings of Validation Reference MPVL.

2.5.2.1 Modification for DNS Service

- Delete the **Value** and **Name** for the restricted **directory** of **AsdnsSmLog** attribute.

The **Value** and **Name** for the restricted **directory** of **AsdnsSmLog** attribute can cause configuration duplicating failure.

To delete the **Value** and **Name** for the restricted **directory** of **AsdnsSmLog** attribute after section 2.5.1 Reference MPVL Validation:

1. Find the restricted directory of **AsdnsSmLog** attribute in the DNS reference configuration created in section 2.5 in **Configurations** workspace.
2. Right click the restricted directory and select **Delete**. The **Delete dialog box** opens.
3. Click **OK**.

- Delete the **Value** and **Name** for the restricted **directory** of **DnsSmLog** attribute.

The **Value** and **Name** for the restricted **directory** of **DnsSmLog** attribute can cause configuration duplicating failure.

To delete the **Value** and **Name** for the restricted **directory** of **DnsSmLog** attribute after section 2.5.1 Reference MPVL Validation:

1. Find the restricted directory of **DnsSmLog** attribute in the DNS reference configuration created in section 2.5 in **Configurations** workspace.
2. Right click the restricted directory and select **Delete**. The **Delete dialog box** opens.
3. Click **OK**.

2.5.2.2 Modification for ENUM Service

- Delete the **Value** and **Name** for the restricted **directory** of **AsdnsSmLog** attribute.

Because ENUM reference contains DNS, the **Value** and **Name** for the restricted **directory** of **AsdnsSmLog** attribute must be deleted before the configuration package creation in section 2.11.

For the delete procedure, refer to section 2.5.2.1.



- Delete the **Value** and **Name** for the restricted **directory** of **DnsSmLog** attribute.

For the delete procedure, refer to section 2.5.2.1.

- Fix the warning from the attribute **inapDigitTable**.

After importing a ENUM reference MPVL described in section 2.5. The warning of attribute **inapDigitTable** in validation report shows as follow:

```
WARNING VALUE | P | ManagedElement[managedElementId=1], IpworksFunction[ipworksRootId=1], IpworksDnsRoot[ipworksDnsRootId=1], IpworksEnumRoot[ipworksEnumRootId=1], EnumServer[enumServerId=1], Erh[erhId=1], ErhSs7[erhSs7Id=1], inapDigitTable="0x0=0, 0x1=1, 0x2=2, 0x3=3, 0x4=4, 0x5=5, 0x6=6, 0x7=7, 0x8=8, 0x9=9, 0xA=, 0xB=b, 0xC=c, 0xD=, 0xE=" | Data type: STRING |
Format: Pattern: ^ (0x0=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x1=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x2=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x3=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x4=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x5=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x6=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x7=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x8=([0-9A-Fa-f]|\*|\#|\ )\, ) (0x9=([0-9A-Fa-f]|\*|\#|\ )\, ) (0xA=([0-9A-Fa-f]|\*|\#|\ )\, ) (0xB=([0-9A-Fa-f]|\*|\#|\ )\, ) (0xC=([0-9A-Fa-f]|\*|\#|\ )\, ) (0xD=([0-9A-Fa-f]|\*|\#|\ )\, ) (0xE=([0-9A-Fa-f]|\*|\#|\ )\ ) ) $
```

Fix this warning as follow:

1. In the MPVL file with **Configurations** workspace, find the attribute **inapDigitTable** (see Figure 6).
2. Right click this attribute and select **Edit**. The **Edit dialog box** opens.
3. Add a space to the **inapDigitTable** value (see Figure 7).
4. Click **Apply**.

The updated value is saved.

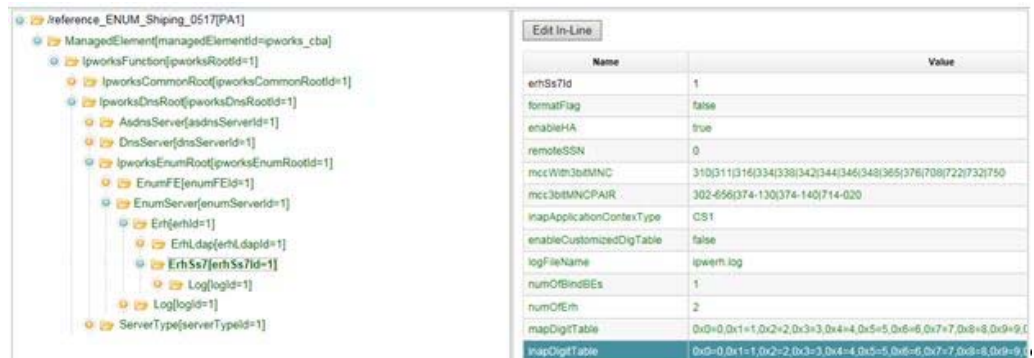


Figure 6 Directory of the value inapDigitTable

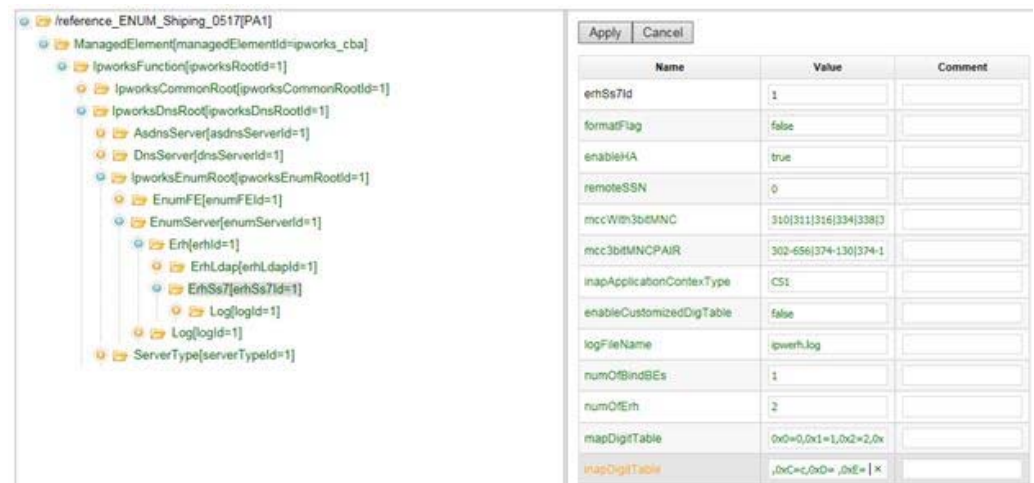


Figure 7 Add a space to the end of value inapDigitTable

2.5.2.3

Modification for AAA Diameter Service

- Delete the **Value** and **Name** for the restricted **directory** of **AAAServerManager** attribute.

The **Value** and **Name** for the restricted **directory** of **AAAServerManager** attribute can cause configuration duplicating failure.

To delete the **Value** and **Name** for the restricted **directory** of **AAAServerManager** attribute after section 2.5.1 Reference MPVL Validation:

- Find the restricted directory of **AAAServerManager** attribute in the AAA Diameter reference configuration created in section 2.5 in **Configurations** workspace.
- Right click the restricted directory and select **Delete**. The **Delete dialog box** opens.
- Click **OK**.



2.5.2.4 Modification for AAA Radius Service

- Delete the **Value** and **Name** for the restricted **directory** of **AAAServerManager** attribute.

For the delete procedure, refer to section 2.5.2.3.

2.5.2.5 Modification for IPWorks Common

- Delete the **Value** and **Name** for the restricted **directory** of **StorageServer** attribute.

The **Value** and **Name** for the restricted **directory** of **StorageServer** attribute can cause configuration duplicating failure.

To delete the **Value** and **Name** for the restricted **directory** of **StorageServer** attribute after section 2.5.1 Reference MPVL Validation:

1. Find the restricted **directory** of **StorageServer** attribute in the IPWorks common reference configuration created in section 2.5 in **Configurations** workspace.
2. Right click the restricted **directory** and select **Delete**. The **Delete dialog box** opens.
3. Click **OK**.

- Delete the **Value** and **Name** for the restricted **port** of **StorageServer** attribute.

The restricted **port** of attribute **StorageServer** can cause configuration duplicating failure.

The **Value** and **Name** for the restricted **port** of **StorageServer** attribute can cause configuration duplicating failure.

To delete the **Value** and **Name** for the restricted **port** of **StorageServer** attribute after section 2.5.1 Reference MPVL Validation:

1. Find the restricted port of **StorageServer** attribute in the IPWorks common reference configuration created in section 2.5 in **Configurations** workspace.
2. Right click **value port** and select **Delete**. The **Delete dialog box** opens.
3. Click **OK**.

2.6 Importing a variable MPVL and relevant IPWorks Feature MPVL

The section describes how to import a variable MPVL and a relevant IPWorks feature MPVL.



2.6.1 Importing a variable MPVL

Variable MPVL file contains the site-specific parameters relevant IPWorks service.

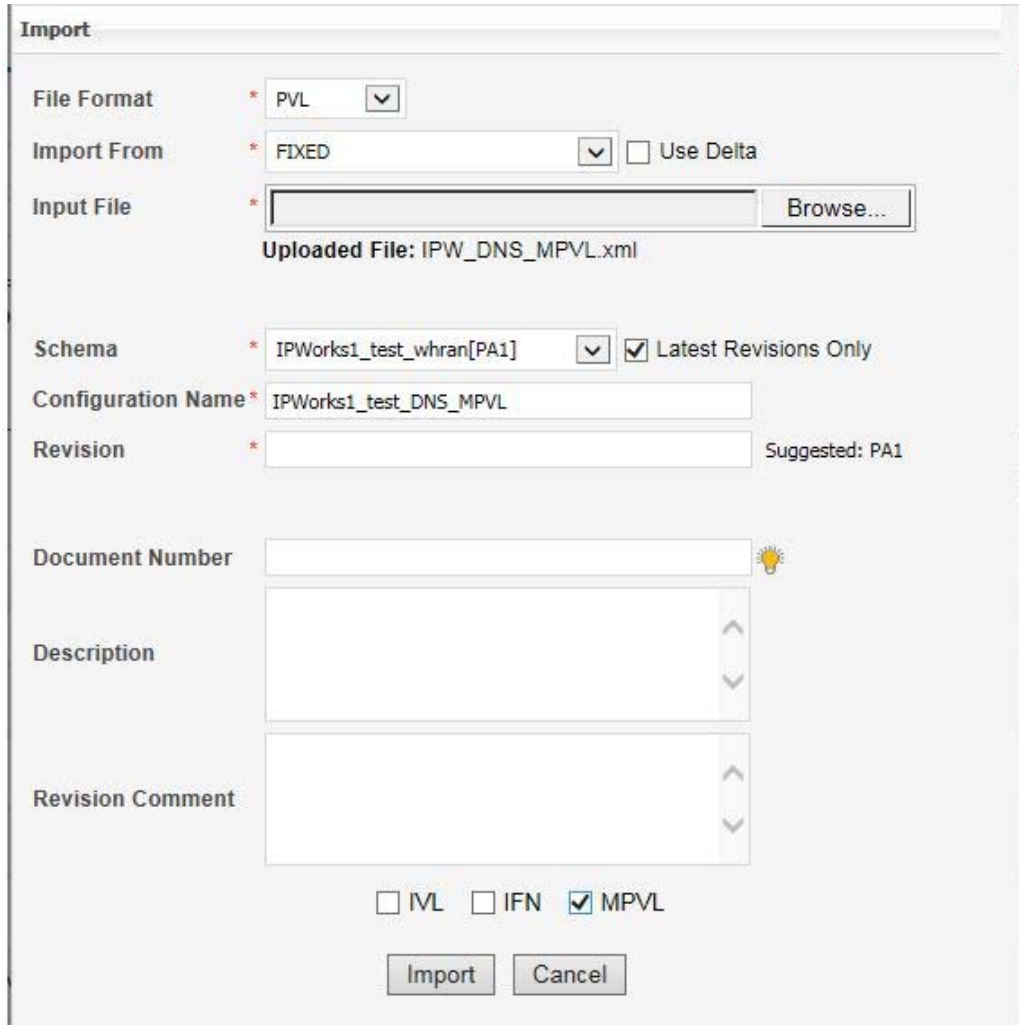
For example, import DNS variable MPVL:

1. In the **Configurations** workspace, click **Import**.
2. Select the **File Format** with “PVL”, **Import From** with “FIXED”, **Schema** with the schema described in section 2.4. Add DNS variable MPVL file `DNS_variable_MPVL.xml` from [Advanced Configuration Packages](#) to **Input File**.
3. Select the file type with “MPVL”.
4. Click **Import**. This new variable MPVL is displayed in **Configurations** workspace (see Figure 8). Refer to the section *Importing a Node Configuration* in *PDB User Guide*.
5. Modify the value of attribute `ManagementElementId` of the reference MPVL to the value `{{NODE_NAME}}`.
 - Open the reference MPVL described in section 2.5.
 - Click attribute `ManagementElementId` (see Figure 9).
 - Click **Edit In-Line**
 - Set `{{NODE_NAME}}` to value field of **managedElementId**.
 - Click **Apply**.

Note: After click Apply, a error message will be displayed, but can be ignored .

```
Errors during apply/create:  Key Parameter
[managedElementId={{NODE_NAME}}] WARNING
Format check depends on site specific values
for managedElementId={{NODE_NAME}} WARNING No
global variable with name 'NODE_NAME' defined.
-----
```

6. PDB automatically validates configuration files during the import a variable MPVL. This check verifies the syntax of the configuration files and validates the node configuration according to the selected schema. Refer to the section 2.5.1.



The Import dialog tab contains the following fields and controls:


- File Format**: * PVL (dropdown)
- Import From**: * FIXED (dropdown) ☐ Use Delta
- Input File**: * [Text Field] Browse...
Uploaded File: IPW_DNS_MPVL.xml
- Schema**: * IPWorks1_test_whran[PA1] (dropdown) ☒ Latest Revisions Only
- Configuration Name**: * IPWorks1_test_DNS_MPVL
- Revision**: * [Text Field] Suggested: PA1
- Document Number**: [Text Field] 
- Description**: [Text Area]
- Revision Comment**: [Text Area]
- Options**: ☐ IML ☐ IFN ☒ MPVL
- Buttons**: Import, Cancel

Figure 8 Import Dialog tab



The Modify dialog shows the following structure:

- Tree view: /IPWorks1_test_DNS_MPVL[PA1] > ManagedElement[managedElementId={{(NODE_NAME)}}]
- Edit In-Line** button
- Table**:

Name	Value	Comment
managedElementId	{{(NODE_NAME)}}	
networkManagedElementId	{{(NODE_NAME)}}	

Figure 9 Modify the value of ManagementElementId

2.6.2 Importing a relevant IPWorks Feature MPVL

This section describes how to import a relevant IPWorks feature MPVL.

A relevant IPWorks feature MPVL can be imported in PDB, if the relevant IPWorks feature is not enabled in source site and needs to be used in target site.



For example, to import IPWorks PKI Server feature MPVL:

1. Import the NETCONF file `IPW_AAA-DIAMETER_PKISERVICE_MPVL.xml` to PDB, refer to the section 2.6.1

Note: This file contains some attributes with default and variable values.

2.6.3 Modifying some parameters for special features of AAA (option)

This section lists the parameters for special features of AAA service.

If Accounting forward or IWLAN service is enabled in AAA RADIUS service; WiFi mobility management, Non-SIM Device Support (NSDS), or EIR domain is enabled in AAA Diameter service, the following parameters listed in table below must be modified in AAA Diameter and AAA Radius reference mpvl configurations.

The procedure of manual Modifying Parameters refers to the section 9.3.3.1 in *PDB User Guide*.

Table 1 Parameters for special features of AAA service

ManagedElement	Attribute	Description
+-IPWorksAAARoot +-IPWorksDiameterAAARoot +-DiameterAAAService +-AAAPKIService	serverPrivateKeyPassword	Server private key password
+-WIFIMMService	mcc4AnonymousProxy	The specific MCC(mobile Country Code) for anonymous proxy in WiFi Mobility
	mcc4HPLMN	MCC of Home PLMN(public Land Mobile network) in WiFi Mobility Management
	mcc4UnknownUserLocation	Default MCC for WiFi Mobility Management. It is used if the user location is unknown.
	specialMNC	The specific MNC for WiFi Mobility Management, which is negotiated with HSS.
+-DiameterStack +-EirDomain	eirRealm	EIR Dest-Realm information



ManagedElement	Attribute	Description
+ - IPWorksAAARoot + - IPWorksRadiusAAARoot + - RadiusAAAService + - AccountingService + - AcctForward + - AcctForwardGroupMgr + - AcctForwardGroup	acctForwardDestAddr	Accounting forward remote server address list, split by ":". For example, "10.175.185.52 : 10.175.185.53".
+ - IWLANSservice + - RadiusSS7Stack	cmpAddress	Specifies the CP(Connection point) management address of SS7 stack. The format is IP: port. The setting must be the same as that of CP Manager Address of the SS7 stack.
	sgsnAddress	Specifies the IP address of SGSN(Serving GPRS Support Node).

2.7 Merging a complete MPVL

The section describes how to merge the content of Reference MPVL and Feature MPVL to a complete MPVL.

To merge a complete MPVL, do:

1. In the **Configurations** workspace, select the node described in section 2.3 and Click **Search**. Make sure that the Feature MPVL and Reference MPVL are displayed, if the Feature MPVL exists.

If only create one node and use the same schema, all MPVLs will be displayed.

2. Click **Merge**. The **Merge dialog box** opens (see Figure 10).
3. Push the Variable MPVL or feature MPVL in Available Box to Selected Box.
4. Push the Reference MPVL in Available Box to Selected Box.

Note: Ensure that the Reference MPVL is lower than other MPVL in Selected Box.

5. Select the schema described in section 2.4 to **Schema** and define a complete MPVL name.
6. Click **Next>**. The **Merge Report dialog** opens (see Figure 11).



7. Select **Use Default Resolution** and check if all possible values contain double curly brackets `{{` and `}}`.
8. Click **Finish**. The complete MPVL is displayed in **Configurations** workspace.

Refer to the section *Merging Node Configurations* in *PDB User Guide*.

Figure 10 Merge dialog tab

Parameter name	MCI (path to parameter)	Possible Values
ssUserName	ManagedElement[managedElementId= {{{(NODE_NAME)}}}] ipworksFunction[ipworksRootId=1] ipworksDnsRoot[ipworksDnsRootId=1] DnsServer[dnsServerId=1] DnsSm[dnsSmId=1]	{{{STORAGESEVER_USERNAME}}}
networkManagedElementId	ManagedElement[managedElementId= {{{(NODE_NAME)}}}]	{{{NODE_NAME}}}

Figure 11 Merge Report dialog tab

2.8 Creating a Site-Specific List (SSL)

This section describes how to create a Site-Specific List (SSL), add Site-Specific variables from the complete MPVL and assign values to the variables.

To create a SSL, do:

1. In the **Site-Specific Lists** workspace, click **New**.
2. Enter the required information. Refer to the section *Creating a New Site-Specific List* in *PDB User Guide*




3. Click **Apply**.

To add Site-Specific variables from the complete MPVL, do:

1. In the **Site-Specific Lists** workspace, choose the created item. The **Site Specific Parameters** table is displayed.
2. Click **Add from Configuration**. The **Configurations dialog box** opens
3. Select the complete MPVL created in section 2.7 with the Format NETCONF in the **Configuration** field
4. Click **Add from Configuration** (see Figure 12).

Note: The SSL contains 4 mandatory parameters <Application>_NC_HOST, <Application>_NC_PASSWORD, <Application>_NC_PORT, and <Application>_NC_USER . They are respectively target site host, target site password, target site NETCONF port and NETCONF user.

5. The Site Specific Parameters is displayed. Click  , the **Usage Dialog** opens.
6. Select complete configuration to search in the **Configuration** field.
7. Click **Find**. The name or revision level displays matching node configuration.

Refer to the section *Adding Site-Specific Variables from a Node Configuration* in *PDB User Guide*.

To assign values to the variables, do:

1. In the **Site-Specific Lists** workspace, select the created SSL to work with.
2. Click **Edit**.
3. Update the site-specific information.
4. Click **Apply**.



Site Specific Parameters				
Add from Configuration		Edit		
Name ▲	Value	Description	Usage	
DNSSM_SS_PASSWORD				
DNSSM_SS_USERNAME				
ERHSS7_REMOTESN				
MGC_NC_HOST				
MGC_NC_PASSWORD				
MGC_NC_PORT				
MGC_NC_USER				

Figure 12 Example of ENUM Site Specific Parameters

For more information, refer to the section *Modifying Site-Specific Variables* in *PDB User Guide*.

2.9 Adding additional specific Configurations

For detailed information about Adding additional specific Configurations, see appendix.

2.10 Complete MPVL Validation

PDBGUI can validate that the number of instances defined for given element within a node configuration is allowed by the schema. Besides, PDBGUI can validate that the parameter values defined within a node configuration follow the type constraints and value patterns that are allowed for that element as defined by the schema.

To validate the complete MPVL, do:

1. In the **Configurations workspace**, right click the **complete MPVL** and select **Validate**. The **Validations dialog** opens.
2. Select Site Specific List.
3. Click **Validate**.
4. Click **Download Report** to save the Validation report. For the warning solution, refer to Section 2.5.1.

2.11 Creating a Configuration Package

This section describes how to create the configuration package with PDBGUI.

To manually export a node configuration, do:

1. In the **Configurations workspace**, right click the **complete MPVL** and select **Export** (see Figure 13).
2. Select the **Format** “NETCONF” with “Use NETCONF Subsystem ‘-s netconf’”.
3. Select “Resolve variables using a Site Specific List” .
4. Select the site specific list described in section 2.8.
5. Click **Export**.
6. Click **Download Configuration** to save the configuration archive.

For more information, refer to the section *Exporting a Node Configuration in PDB User Guide*.

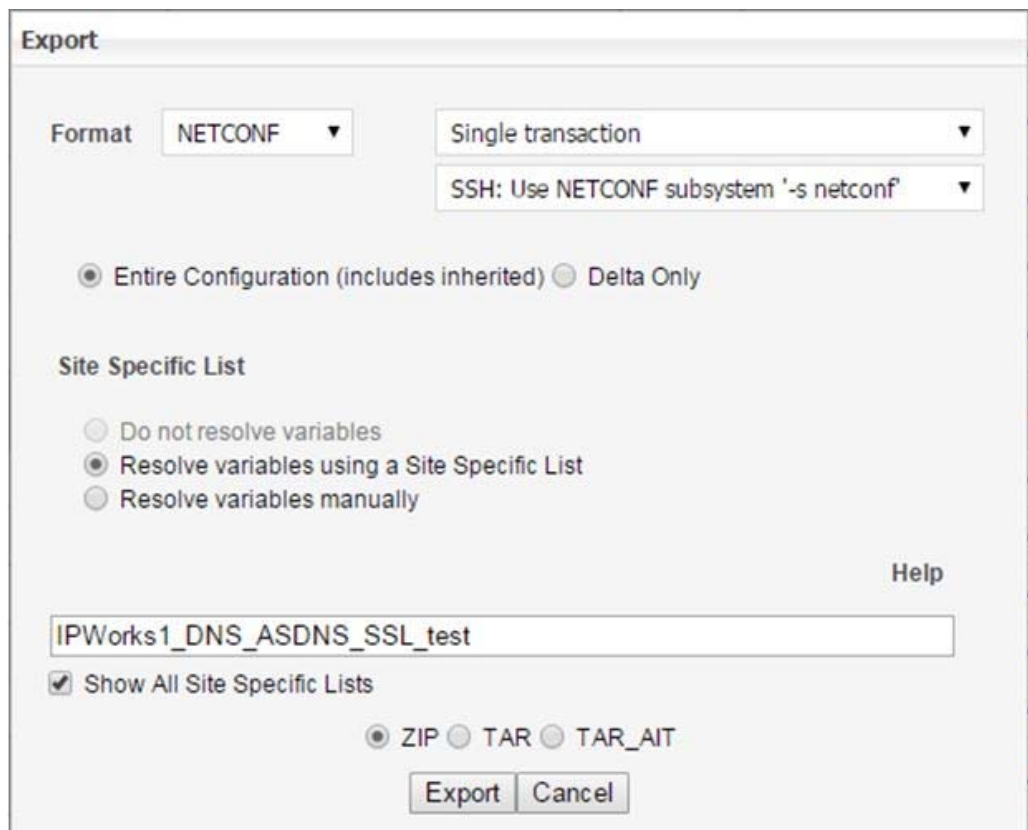


Figure 13 Export a Configuration Dialog Box

2.12 Merging configuration

This section describes how to merge the configuration package to the IPWorks in target Site.



To merge the configuration to Target Site, do:

1. Unzip the configuration package in Target Site. It contains following files and folder:
 - configuration_package.zip
 - node_configuration
 - pdb-configtool.jar
 - run_configure.bat
 - run_configure.sh
2. Execute run_configure.sh for Linux, and run_configure.bat for Windows®, to push the configurations through the NETCONF protocol into the Target Site.

The script contains the username, password, and IP address of the Target Site. This information is set in the site-specific list, which is used in the creation of the configuration package. The script deploys all configuration data present in the is.xml file, which can be found in the node_configuration folder.





3 Validation of Advanced Configuration

This function is used for check whether the configuration duplicating from source site to target site is successful.

To validate of Advanced Configuration:

1. Check whether the relevant service reference MPVL created in section 2.5 is existed.
2. After configuration duplicating forwards to target site, setup the Node Connection with ENB in target site, refer to section 2.1.
3. Save IPWorks relevant service configuration of target site, refer to section 2.2.
4. Import relevant service reference MPVL of target site, refer to section 2.5.
5. Comparison of reference MPVL between source site and target site, refer to the section *Comparing Two Configurations* in *PDB User Guide*.

If all relevant service configuration data of source site and target site except site-specific parameters is same, the configuration duplicating from source site to target site is successful.





4 Appendix A Adding additional specific configurations

This section describes how to add additional specific configurations corresponding IPWorks service.

4.1 Adding a new Parameter Group for DNS

This section describes how to add a new parameter group corresponding IPWorks DNS.

4.1.1 Add PmJob Parameter Group for DNS

This section describes how to add a Pm Job parameter group in PDB configuration based on requirement.

To add a Pm Job parameter group, do:

1. Open the complete configuration in **Configurations** workspace.
2. Under ManagementElement instance, right click the option **Add Parameter Group**, **Add Parameter Group dialog box** opens.
3. Under the **Add Parameter Group dialog box**, select the filed Name System Function, set the value 1 to the filed systemFunctionId and click **Apply**.
4. Under the System Function instance, right click the option **Add Parameter Group**, **Add Parameter Group dialog box** opens.
5. Under the **Add Parameter Group dialog box**, select the field Name Pm, set the value 1 to the field name **pmId** and click **Apply**.
6. Under the Pm instance, right click the option **Add Parameter Group**, **Add Parameter Group dialog box** opens.
7. Under the **Add Parameter Group dialog box**, select the field Name **PmJob**, set the value PmJobId, such as DnsASDNSDefaultJob and click **Apply**
8. Under your PmJobId instance, right click the option **Add Parameter**, **Add Parameter dialog box** opens.
9. Under the **Add Parameter dialog box**, select the field name **Name** one by one, set the relevant value to the field name **Value** and click **Apply**.



10. Under your PmJobId instance, right click the option **Add Parameter Group, Add Parameter Group dialog box** opens.
11. Under the **Add Parameter dialog box**, select the field name **MeasuremntReader** instance and set the value to field name **measurementReaderId**.
12. Under MeasurementReader instance, right click the option **Add Parameter Group, Add Parameter Group dialog box** opens.
13. Under the **Add Parameter dialog box**, select the field name **Name** one by one, set the relevant value to the field name **Value** and click **Apply**.
14. Validate the configuration after the changes are done.

4.2 Adding a new Parameter Group for ENUM

This section describes how to add a new parameter group corresponding IPWorks ENUM.

4.2.1 Add PmJob Instance for ENUM

Refer to section 4.1.1.

4.2.2 Add a CudbSite and a CudbNode Parameter Group

This section describes how to add a CudbSite and CudbNode parameter group.

To add a CudbSite and a CudbNode parameter group, do:

1. Under the CudbManager instance, right click the option **Add Parameter Group, Add Parameter Group dialog box** opens.
2. Under the **Add Parameter Group dialog box**, select the field Name **CudbServiceSite**, set the field value **cudbServiceSiteId**, such as "ENUM" and click **Apply**.
3. Under the CudbServiceSite instance, right click this option **Add Parameter Group, Add Parameter Group dialog box** opens.
4. Under the **Add Parameter Group dialog box**, select the field Name **CudbServiceManager**, set the filed value **cudbSiteManagerId**, such as 1 and click **Apply**.
5. Under the CudbServiceManager instance, right click the option **Add Parameter Group, Add Parameter Group dialog box** opens.
6. Under the **Add Parameter Group dialog box**, select the field Name **CudbSite**, set the field value **cudbSiteId**, such as "enum_site1" and click **Apply**.



7. Under the CudbSite instance, right click the option **Add Parameter Group**, **Add Parameter Group dialog box** opens.
8. Under the **Add Parameter Group dialog box**, select the field Name **CudbNode**, set the value to the field value **cudbNodeid**, such as “127.0.0.1” and click **Apply**.

4.3 Adding a new Parameter Group for AAA Diameter

This section describes how to add a new parameter group for IPWorks AAA Diameter.

4.3.1 Add PmJob Instance for AAA Diameter

Refer to section 4.1.1.

4.3.2 Add APN Parameter Group for AAA Diameter

This section describes how to add an APN parameter group based on requirement.

If necessary, delete existed APN parameter group got from source site.

To add an APN Parameter Group:

1. Under the **AAAPKIAPNList** parameter group, right click the option **Add Parameter Group**, **Add Parameter Group dialog box** opens.
2. Under the **Add Parameter Group dialog box**, select the field Name **APN**, set the field value **apnid**, such as “example-apn1” and click **Apply**.
3. Under the **APN** parameter group, right click the option **Add Parameter**, **Add Parameter dialog box** opens.
4. Under the **Add Parameter dialog box**, select the field Name **apnName**, Set the field value such as “example-apn1” and click **Apply**.
5. Then add other parameter in the same way as **apnName**.
6. If required, add **EPSSubscribedQoSProfile** parameter group under the **APN** parameter group.
7. Under the **APN** parameter group, right click the option **Add Parameter Group**, **Add Parameter Group dialog box** opens.
8. Under the **Add Parameter Group dialog box**, select the field Name **EPSSubscribedQoSProfile**, set the field value **epsSubscribedQoSProfileid**, such as “1” and click **Apply**.
9. Under the **EPSSubscribedQoSProfile** parameter group, add parameters in the same way as **apnName**.



10. Validate the configuration after the changes are done

4.3.3 Add OCSPServer Parameter Group for AAA Diameter

This section describes how to add an OCSPServer parameter group based on requirement.

If necessary, delete existed OCSPServer parameter group got from source site.

To add an OCSPServer parameter group:

1. Under the **OCSPMgr** parameter group, right click the option **Add Parameter Group**, **Add Parameter Group** dialog box opens.
2. Under the **Add Parameter Group** dialog box, select the field Name **OCSPServer**, set the field value **ocspServerId**, such as “1” and click **Apply**.
3. Under the **OCSPServer** parameter group, right click the option **Add Parameter** , **Add Parameter** dialog box opens.
4. Under the **Add Parameter** dialog box, select the field Name **responderUrl**, Set the field value such as “http://127.0.0.1:12345” and click **Apply**.
5. Then add other parameter in the same way as **responderUrl**.
6. Validate the configuration after the changes are done.

4.3.4 Add GTConvert Parameter Group for AAA Diameter

This section describes how to add a GTConvert parameter group based on requirement.

If necessary, delete existed GTConvert parameter group got from source site.

To add a GTConvert parameter group:

1. Under the **GTConvertManager** parameter group, right click the option **Add Parameter Group**, **Add Parameter Group** dialog box opens.
2. Under the **Add Parameter Group** dialog box, select the field Name **GTConvert**, set the field value **gtConvertId**, such as “1” and click **Apply**.
3. Under the **GTConvert** parameter group, right click the option **Add Parameter** , **Add Parameter** dialog box opens.
4. Under the **Add Parameter** dialog box, select the field Name **digitsToAdd**, Set the field value such as “86139” and click **Apply**.
5. Then add other parameter in the same way as **digitsToAdd**.
6. Validate the configuration after the changes are done.



4.3.5 **Add CudbSite Parameter Group and CudbNode Parameter Group for AAA Diameter**

This section describes how to add CudbSite parameter group and CudbNode parameter group.

Refer to section 4.2.2.

4.4 **Adding a new Parameter Group for AAA Radius**

This section describes how to add a new parameter group for AAA Radius.

4.4.1 **Add PmJob Parameter Group for AAA Radius**

This section describes how to add a PmJob Parameter Group.

Refer to section 4.1.1.

4.4.2 **Add CudbSite Parameter Group and CudbNode Parameter Group for AAA Radius**

This section describes how to add CudbSite parameter group and CudbNode parameter group.

Refer to section 4.2.2.

4.4.3 **Add GTConvert Parameter Group for AAA Radius**

This section describes how to add a GTConvert Parameter Group.

Refer to section 4.3.4.

4.4.4 **Add ClientShareSecret Parameter Group for AAA Radius**

This section describes how to add a ClientShareSecret parameter group.

If necessary, delete existed ClientShareSecret parameter group got from source site.

To add a ClientShareSecret parameter group:

1. Under the **ClientShareSecretMgr** parameter group, right click the option **Add Parameter Group**, **Add Parameter Group** dialog box opens.
2. Under the **Add Parameter Group** dialog box, select the field Name **ClientShareSecret**, set the field value **clientSharedSecretId**, such as "1" and click **Apply**.



3. Under the **ClientShareSecret** parameter group, right click the option **Add Parameter** , **Add Parameter** dialog box opens.
4. Under the **Add Parameter** dialog box, select the field Name **clientIPAddr**, Set the field value such as “10.170.15.188” and click **Apply**.
5. Then add other parameter in the same way as **clientIPAddr**.
6. Validate the configuration after the changes are done.

4.4.5 **Add ProxyTargetShareSecret Parameter Group for AAA Radius**

This section describes how to add a ProxyTargetShareSecret parameter group.

If necessary, delete existed ProxyTargetShareSecret parameter group got from source site.

To add an ProxyTargetShareSecret parameter group:

1. Under the **ProxyTargetShareSecretMgr** parameter group, right click the option **Add Parameter Group**, **Add Parameter Group** dialog box opens.
2. Under the **Add Parameter Group** dialog box, select the field Name **ProxyTargetShareSecret**, set the field value **sharedSecretId**, such as “1” and click **Apply**.
3. Under the **ProxyTargetShareSecret** parameter group, right click the option **Add Parameter** , **Add Parameter** dialog box opens.
4. Under the **Add Parameter** dialog box, select the field Name **type**, Set the field value such as “ALL” and click **Apply**.
5. Then add other parameter in the same way as **type**.
6. Validate the configuration after the changes are done.



5 Appendix B Parameter Definition of Site-Specific List

This section describes the Site-Specific List per IPWorks service. These Site-Specific parameters define parts of the target network environment, such as IP addresses, port number, username and login credential.

5.1 Parameter Definition of Site-Specific List for DNS

This section describes the Site-Specific parameters in Site-Specific List for DNS (see Page 33).

Table 2 Site-Specific parameters for DNS

ManagedElement	Variable	Attribute	Description
+-ManagedElement	NODE_NAME	networkManagedElementId	Replaces the value component of the RDN in the COM Northbound Interface.
		managedElementId	
	SITE_LOCATION	siteLocation	Describe the geographic location of a Managed Element.



ManagedElement	Variable	Attribute	Description
+-IpworksFunction +-IpworksDnsRoot +-DnsServer +-DnsSm	STORAGESERVER_USERNAME	ssUsername	Specifies the username that the Server Manager uses to log on to the Storage Server.
	STORAGESERVER_PASSWORD	ssPassword	Specifies the password for the Storage Server username account. The password is case sensitive Note: The value can be changed when the Server Manager is running, but it will not take effect unless Server Manager is reloaded.

5.2 Parameter Definition of Site-Specific List for ENUM

This section describes the Site-Specific parameters in Site-Specific List for ENUM (see Page 34).

Table 3 Site-Specific parameters for ENUM

ManagedElement	Variable	Attribute	Description
+-ManagedElement	NODE_NAME	networkManagedElementId	Replaces the value component of the RDN in the COM Northbound Interface.
		managedElementId	Specifies the user name that the Server Manager uses to log on to the Storage
	SITE_LOCATION	siteLocation	Describe the geographic location of a Managed Element



ManagedElement	Variable	Attribute	Description
+-IpworksFunction +-IpworksDnsRoot +-DnsServer +-DnsSm	STORAGES ERVER_USE RNAME	ssUsername	Specifies the username that the Server Manager uses to log on to the Storage Server.
	STORAGES ERVER_PAS SWORD	ssPassword	Specifies the password for the Storage Server username account. The password is case sensitive Note: The value can be changed when the Server Manager is running, but it will not take effect unless Server Manager is reloaded.
+-IpworksFunction +-IpworksDnsRoot +-IpworksEnumR +-EnumServer +-Erh +-ErhSs7	ERHSS7_RE MOTESN	remoteSSN	ERH remote SSN. Takes effect after ENUM server is restarted.

5.3 Parameter Definition of Site-Specific List for IPWorks Common

This section describes the Site-Specific parameters in Site-Specific List for IPWorks Common (see Page 35).

Table 4 Site-Specific parameters for IPWorks Common

ManagedElement	Variable	Attribute	Description
+-ManagedElement	NODE_NAME	networkManagedElement	Replaces the value component of the RDN in the COM Northbound
		managedElementId	
	SITE_LOCATION	siteLocation	Describe the geographic location of a Managed Element



ManagedElement	Variable	Attribute	Description
+-IpworksFunction +-IpworksCommonRoot +-StorageServer +-SSInterface	STORAGES ERVER_AD DRESS	Address	Address of the storage server, which is running and provides the provisioning service.
	STORAGES ERVER_US ERNAME	username	Specifies the user name that the Server Manager uses to log on to the Storage Server.
	STORAGES ERVER_PA SSWORD	password	Specifies the password for the Storage Server username account. The password is case sensitive Note: The value can be changed when the Server Manager is running, but it will not take effect unless Server Manager is reloaded..

5.4 Parameter Definition of Site-Specific List for AAA Diameter

This section describes the Site-Specific parameters in Site-Specific List for AAA Diameter (see Page 36).

Table 5 Site-Specific parameters for AAA Diameter

ManagedElement	Variable	Attribute	Description
+-ManagedElement	NODE_NA ME	managedEle mentId	Replaces the value component of the RDN in the COM Northbound Interface.
		networkMana gedElementId	
	SITE_LOC ATION	siteLocation	Describe the geographic location of a Managed Element.
+-IPWorksAAARoot +-IPWorksDiameterHSSRealm +-DiameterAAAService	HSS_REALM	hssRealm	Define the HSS Dest-Realm information.



ManagedElement	Variable	Attribute	Description
<code>+ -SS7Stack</code>	SS7STACK_DESTSSN	destSSN	Define the dest SSN (subsystem name) for ss7stack. Takes effect: After next restart

5.5 Parameter Definition of Site-Specific List for AAA Radius

This section describes the Site-Specific parameters in Site-Specific List for AAA Radius (see Page 37).

Table 6 Site-Specific parameters for AAA Radius

ManagedElement	Variable	Attribute	Description
<code>+ -ManagedElement</code>	NODE_NAME	networkManagedElementId	Replaces the value component of the RDN in the COM Northbound Interface.
		managedElementId	
	SITE_LOCATION	siteLocation	Describe the geographic location of a Managed Element.



ManagedElement	Variable	Attribute	Description
<pre>+ -IPWorksRadiusAAARoot + -IPWorksRadiusAAARoot + -RadiusAAAService + -AccountingService + -CSVFTPInformation</pre>	CSVFTP_SERVERADDRESS	ftpServerAddress	<p>The IP address of FTP server. This is only valid for FTP push method.</p> <p>Takes effect: After next restart</p>
	CSVFTP_SERVERPORT	ftpServerPort	<p>The port of FTP server. This is only valid for FTP push method.</p> <p>Takes effect: After next restart</p>
	CSVFTP_MODE	mode	<p>IPWorks enables the user to transfer the CSV files to a remote FTP server if needed.</p> <p>Specifies the FTP transfer method of CSV File: PULL_METHOD PUSH_METHOD.</p> <p>The settings of the other FTP Transfer parameters take effect only when this parameter is set to PUSH_METHOD.</p> <p>Takes effect: After next restart</p>
	CSVFTP_PASSWORD	password	<p>The password of FTP server for the username. This is only valid for FTP push method.</p> <p>Takes effect: After next restart</p>
	CSVFTP_USERNAME	username	<p>The username of FTP server. This is only valid for FTP push method.</p> <p>Takes effect:</p>



Reference List

- [1] *PDB User Guide*
- [2] *Ericsson NETCONF Browser User Guide*
- [3] *IPWorks Configuration Management*