

Geographical Redundancy Network Configuration Guide

Ericsson Service-Aware Policy Controller

USER GUIDE

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Abstract

The purpose of this document is to give detailed information about the network configuration of an Ericsson Service-Aware Policy Control (SAPC) for Geographical Redundancy.



Contents

1	Introduction	1
1.1	Document Purpose and Scope	1
1.2	Revision Information	1
1.3	Typographic Conventions	1
2	Overview	3
3	Networks Allocation	5
3.1	IP Addressing	5
4	Logical Network Assignment	7
4.1	Geographical Redundancy VIP Configuration for VNF Deployments	7
4.2	Geographical Redundancy VIP Configuration for PNF Deployments	8
	Glossary	9





1 Introduction

1.1 Document Purpose and Scope

The purpose of this document is to define the network configuration needed to run the SAPC in a Geographical Redundancy deployment.

There are many configuration aspects in common with standalone deployments, for more information about the hardware, software and network components definition see:

- [BSP 8100 Network Configuration Guide](#) or [NSP 6.1 Network Configuration Guide](#), when the SAPC runs in a PNF deployment.
- [Cloud Network Configuration Guide](#), when the SAPC runs in a VNF deployment.

1.2 Revision Information

Rev. A First revision of this document.

Rev. B Update for new PNF Deployment.

1.3 Typographic Conventions

The following typographic and document conventions are used:

Table 1 Typographic Conventions

Convention	Description	Example
User Input	A command that you must enter in an SSH CLI session exactly as written.	<code>cd \$HOME</code>
Command Variables	Command variables, the values of which you must supply.	<code><VIP-Traffic></code>
System Elements	Command and parameter names, program names, path names, URLs, and directory names	The files are located in <code>/cluster/etc/my.conf</code> .
Output Information	Text displayed by the system	System awaiting input
Code Examples	Code examples	<code>stat char* months[]=\n{Jan, Feb}⁽¹⁾</code>

(1) The backslash (\) is used to show where long lines are split.





2 Overview

This section provides an overview of the general network description for Geographical Redundancy deployment.

The Geographical Redundancy deployment allows two SAPC nodes to be used in a mated pair providing a highly available configuration which is seen as one node in a telecom network. This mechanism works in Active-Standby mode, meaning one SAPC handles all traffic and provisioning and the other takes over whenever the active node becomes unavailable. To make transparent to the SAPC clients the existence of two nodes, both share a VIP address (one for traffic and another one for provisioning) providing a single point of access for both nodes. The VIP address is only announced by the active node.

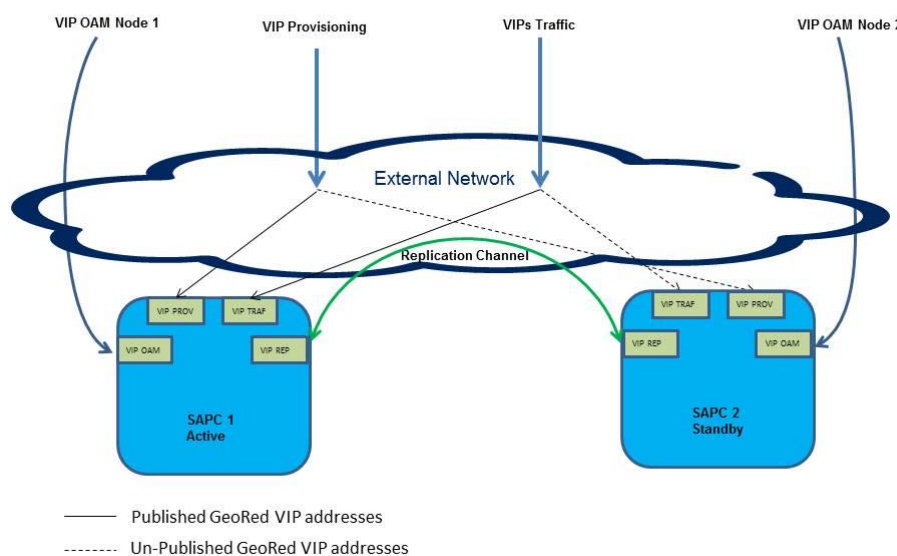


Figure 1 Geographical Redundancy

In this configuration, customer routers are used to direct incoming traffic to the correct node. In previous figure, the node that has published the VIP Address gets the traffic. For more details, refer to [Node Network Description](#).

The Geographical Redundancy network configuration can be added to every standalone deployment described in:

- [BSP 8100 Network Configuration Guide](#) or [NSP 6.1 Network Configuration Guide](#), when the SAPC runs in a PNF deployment.



- Cloud Network Configuration Guide, when the SAPC runs in a VNF deployment.



3 Networks Allocation

This section specifies how the two SAPC nodes are connected to the external network. All the networks and IP addresses described are routable through customer network. Before starting to configure the SAPC nodes network, all the details (IP addresses, Network, and so on) referenced in this section should be agreed with the customer.

3.1 IP Addressing

Each SAPC nodes pair requires a set of IP addresses agreed with the customer before configuring the SAPC nodes.

3.1.1 IP Addresses

Table 2 IP Addresses

IP Address (Suggested value)	Usage
<VIP-OAM> Node 1	OAM IP Address for the first node.
<VIP-OAM> Node 2	OAM IP Address for the second node.
<VIP-Provisioning>	Provisioning IP Address shared between two nodes.
<VIP-Traffic> (1)	Traffic IP address shared between two nodes.
<VIP-Replication> Node 1	Replication IP address for the first node.
<VIP-Replication> Node 2	Replication IP address for the second node.

(1) Several Traffic VIPs can be configured





4 Logical Network Assignment

This section describes the mapping, in the different pieces of networking equipment, of VLANs to Ethernet ports in PNF deployments or Networks to vNICs in VNF deployments.

4.1 Geographical Redundancy VIP Configuration for VNF Deployments

This section describes the VIP configuration, for each SAPC node, to fill in the template provided in the *SAPC Cloud Deployment Instruction for CEE* or *SAPC Cloud Deployment Instruction for VMware*.

The `evip.xml` configuration file holds many parameters however this document describes the ones that are key to the design and may be adjusted at installation.

In the table below, the distribution of VIP elements is listed. This configuration is already made in the template and adjustment is not required. The location of VIP front ends (FEE) requires corresponding configuration in the network, that is, router.

Table 3 Distribution of VIP Elements

Abstract Load Balancer (ALB)	VIP	Front-End Element (FEE)	Load Balancer Element (LBE)	Security Element (SE)
alb_oam	<VIP-OAM> <VIP-PROVISIONING>	SC-1 (fee_1) SC-1 (fee_2) SC-2 (fee_3) SC-2 (fee_4)	lbe_1 lbe_2	se_1 se_2
alb_tr (1)	<VIP-GX> <VIP-REPLICATION>	PL-3 (fee_1) PL-4 (fee_2) PL-5 (fee_3) PL-6 (fee_4) PL-7 (fee_5) PL-8 (fee_6) PL-3 (fee_7) PL-4 (fee_8) PL-5 (fee_9) PL-6 (fee_10) PL-7 (fee_11) PL-8 (fee_12)	lbe_1 lbe_2 lbe_3 lbe_4 lbe_5 lbe_6	se_1 se_2 se_3 se_4 se_5 se_6

(1) For Multiple Traffic Networks, the ALB is called `alb_trf_1`.



4.2 Geographical Redundancy VIP Configuration for PNF Deployments

This section describes the VIP configuration, for each SAPC node, to fill in the template provided in the [SAPC PNF Deployment Instruction](#).

The distribution of VIP elements, for each node, is described in [BSP 8100 Network Configuration Guide](#) or [NSP 6.1 Network Configuration Guide](#). This configuration is already made in the template and adjustment is not required.



Glossary

ALB

Abstract Load Balancer

FEE

Front-End Element

LBE

Load Balancer Element

OAM

Operation and Maintenance

PL

Payload

PNF

Physical Node Function

SC

System Controller

SE

Security Element

VNF

Virtualized Network Function