Cloud PBX Solutions

Cloud PBX Core

Low Level Design

Version v7.1

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Contents

1. Introduction

The vendor describes the required provisioning, encompassing deployment within the proposed solution and existing networks, specifying parameters necessary for provisioning in various elements.

This document outlines the requirements for preparing and configuring resources, network infrastructure, access, services, names, and certificates to operate a standard set of components for a cloud PBX installation. The set, arrangement of services, and interaction scheme can vary based on customer conditions, anticipated load, their accustomed data flow patterns, network infrastructure, and limitations.

2. Partner Requirements

2.1. Network Connectivity

An inter-cluster network with available broadcast/multicast is required to facilitate interaction between the platform's core and auxiliary services. Additionally, a public network (if a customer stipulates no additional requirements) with direct IP at specified platform nodes for client SIP, RTP, HTTP, webRTC traffic, and potential operator trunks will be necessary.

The number of IP addresses will depend on the required capacities. The quantity of VLAN networks may not be limited based on partner conditions.

Expected from a customer:

1. Network connection scheme (PNG/PDF format, describing the networks/VLANs/VRF/IP addressing used).
2. SIP gateway connection scheme (IP addresses of gateways and networks through which interaction is intended).
3. Format for passing ANI (Automatic Number Identification) through gateways.

The following will explore an approximate configuration based on a capacity of 200 CAPS with 80 MHT.

2.2. Required Installation Resources

An installation can be hosted at the customer's facilities: on hardware nodes with considerations for redundancy or in the cloud. A standard configuration of installation node resources and accesses is described in Appendix 1. Initial equipment preparation requirements and OS installation are provided in Appendix 2. Requirements for virtual machines when hosting an installation on a cloud platform are outlined in Appendix 3.

2.3. Domain Name Allocation

Each client's cloud PBX will have the format [unique-client-name].[partner-domain]. Third-level as well as fourth-level domains can be allocated. Additionally, there will be names for accessing call records and proxies for CRM system integration within the chosen zone.

As a result, the customer is expected to provide:

1. Required DNS records for operation.
2. Wildcard SSL certificate for the assumed PBX DNS zone.

2.4. Network Services

Preferred network addresses/names of services accepted for use by the customer:

1. NTP
2. DNS
3. Mail relay (SMTP for mail forwarding)
4. SMS Server (preferably SMPP, alternatively, HTTP Rest).

2.5. Partner Contacts

Agreement on exchanging contact information for interaction during emergencies, scheduled work, or problem resolution is required.

Contacts from Cloud PBX Solutions:

Email: support@cloud-pbx.io

Phone: +7 (778) 003-08-55

From a Customer

Type	Email	Phone	Full Name	Position
Maintenance Notifications				
Emergencies and Failures				
On-duty Shift Responsible for Telephony Operation (Gate-ways)				

3. Appendix 1: Approximate Configuration of a Standard Installation

Resources VM, 200CAPS 80MHT

4. Appendix 2: Requirements for Initial Equipment Preparation and OS Installation

When creating virtual machines, the following equipment configuration needs to be ensured:

- Operating system: Linux Debian, the latest stable version.
- File system: BTRFS.
- **Note**: An additional disk will be utilized during the installation of service software.
- Configuration: Standard + SSH Server (without graphical interfaces, web and print services).
- SSH access from addresses 109.69.180.240/29, 5.164.24.127, 195.16.38.189, 109.69.176.210 to VMs with public network interfaces.

For disk partitioning during installation on a physical server:

- Create a separate partition /boot for the OS, approximately 500 MB.
- Provide a file system for core storage.
- **Note**: ext2 is sufficient.
- Create a separate root (“/”) partition, about 10 GB.
- Ensure a btrfs file system.

Note: It’s possible to use the remaining space for LVM immediately or after OS installation.

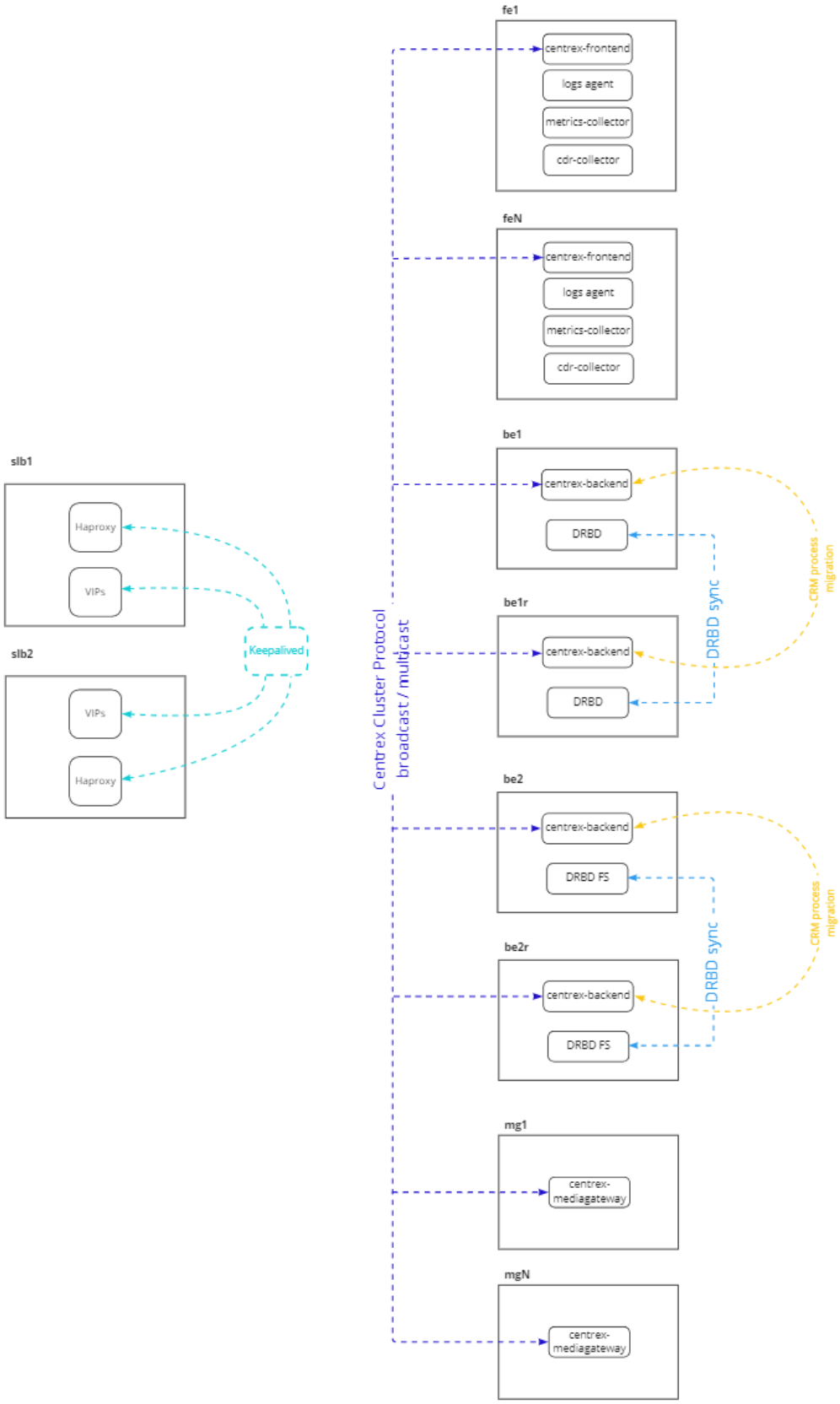
5. Appendix 3: Virtual Machine Requirements

When deploying on a cloud platform, the following requirements need to be met:

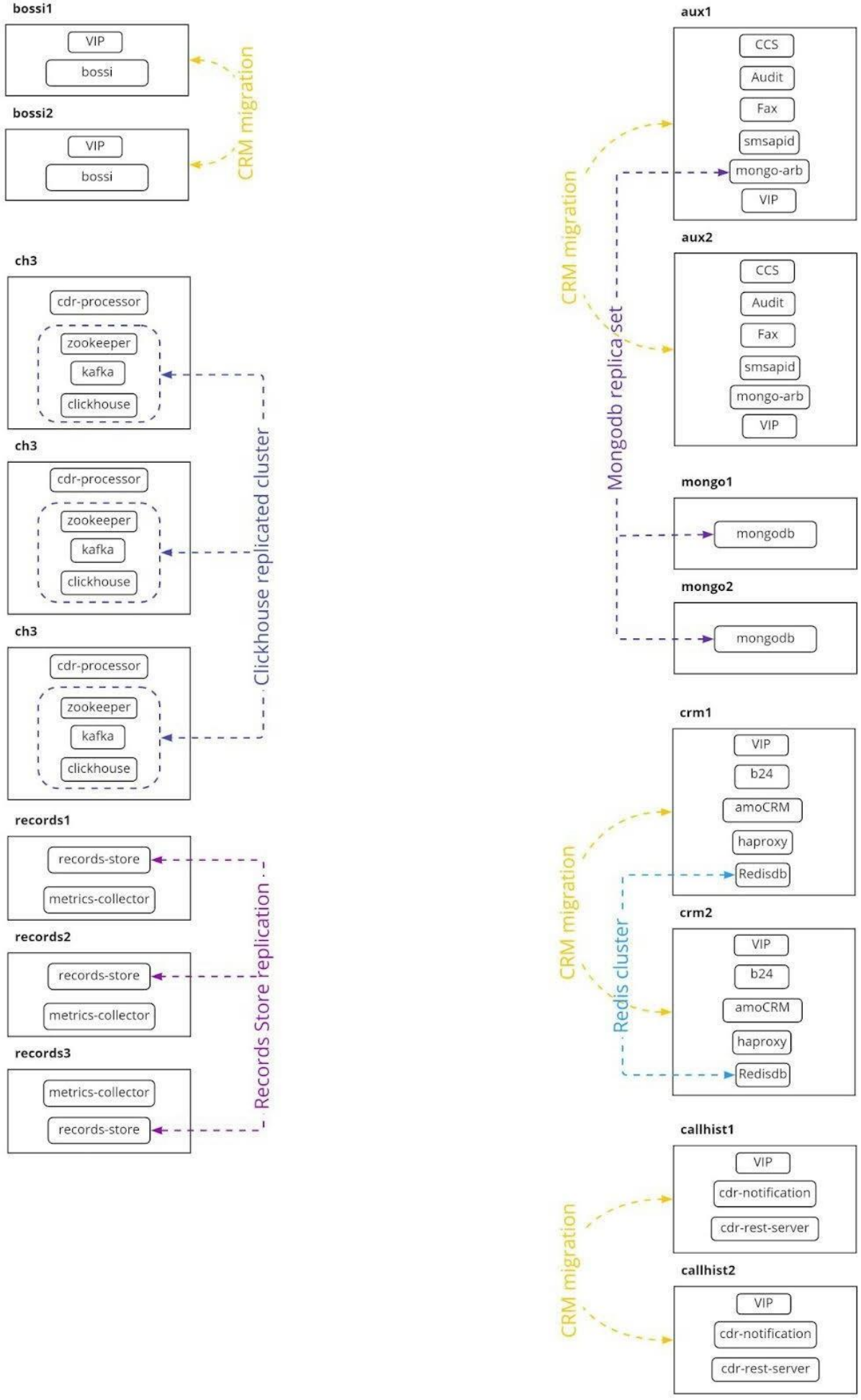
- Enable Latency Sensitivity option to “High” for VM centrex-* (fe/be/mg) (minimum for MG) (VMware).
- Ensure Failover support for all cluster virtual machines (VMware).
- Capability to disable VM backup using virtualization platform tools.
- Resource reservation for VMs on the host (CPU/memory reservation).
- Disable VM migration between hosts during high node load (vMotion) (VMware).
- Allocated VLAN among all virtual machines.

6. Appendix 4: Diagram of HA Cluster Node Structure

6.1. Cluster Core Hosts,

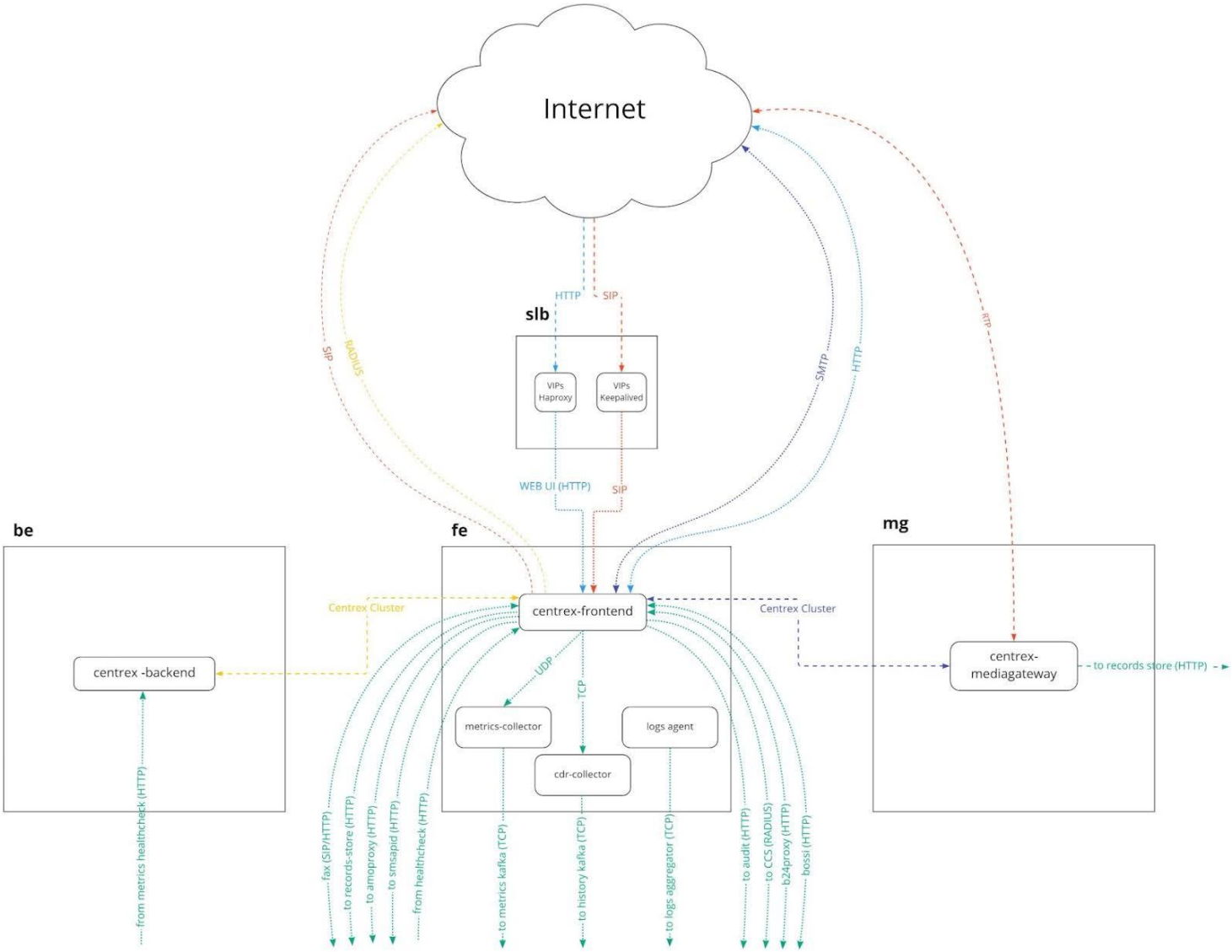


6.2. Auxiliary Hosts, HA

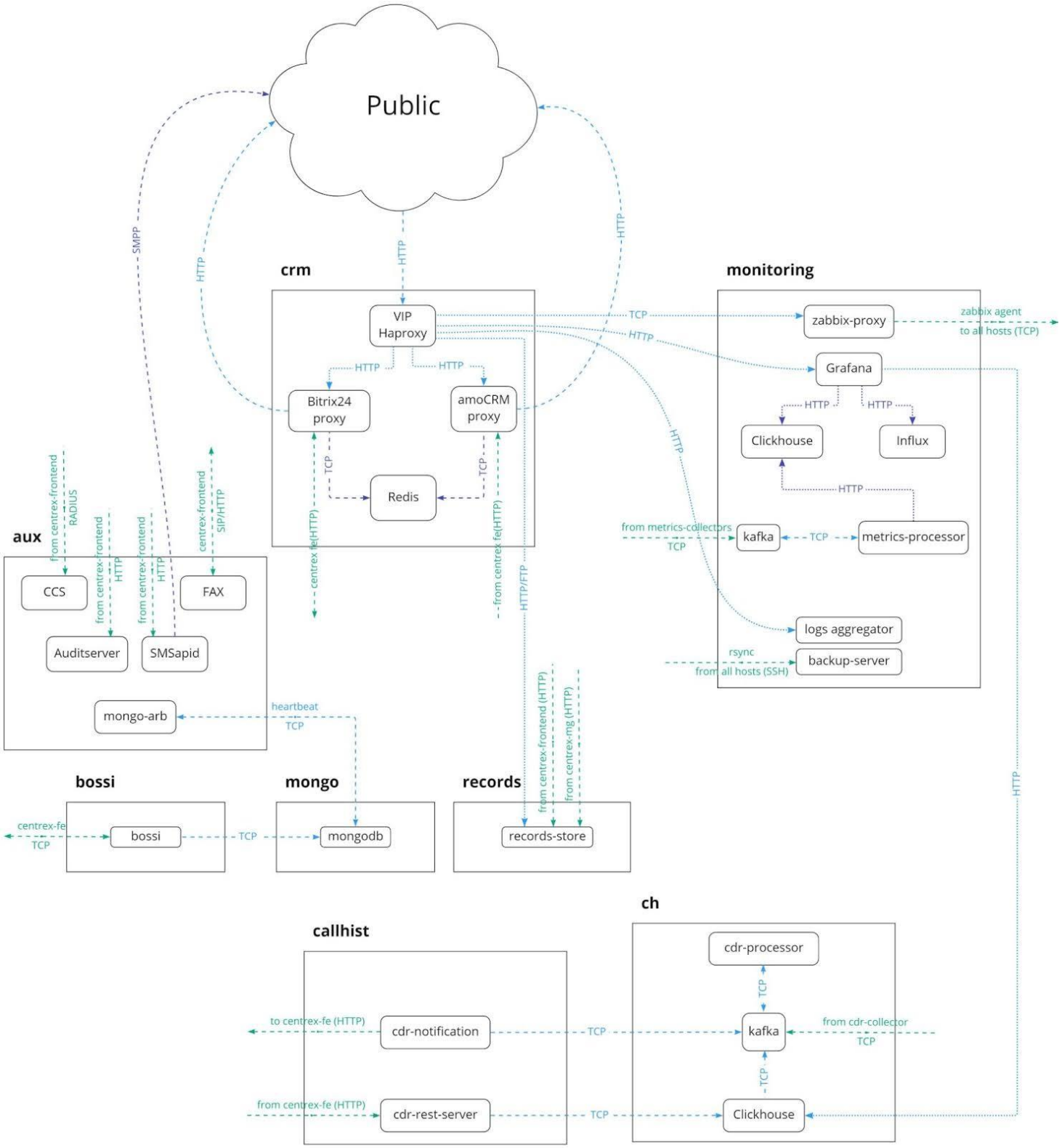


7. Appendix 5: Diagram of Platform Service Interconnections

7.1. Connections, Core



7.2. Connections, Auxiliary Services



8. Appendix 6: Network Diagram of Node Connection