PXC Break/Fix Tutorial

In this tutorial, we'll walk through over several scenarios where things can get complex with your Percona XtraDB Cluster (PXC)/Galera installation. We will break things in these scenarios and then you'll have a chance to diagnose and fix them. Learn some of the most complex troubleshooting techniques. This tutorial assume that you are somehow familiar with the Percona XtraDB Cluster.

Galera focus points

When talking about Galera, the main key points are the following:

- Network layer (Maintain the cluster as a whole): Quorum, Primary Component, Cluster Stability.
- Data consistency (Guarantee data is the same): Certification, Flow Control.

Besides the omnipresent topic on databases, and our reason to live: Performance.

Environment

All the scenarios will take place on a basic 3-node PXC Cluster

![Diagram of a 3-node PXC Cluster]

Creation of the VMs and the cluster are available at the Environment link: [here](#)

Galera key scenarios

Data Consistency

[Flow control](#)
Network

The only sign of a node failure is the loss of connection to the node as seen by other nodes. That's why understanding network in a galera context is key to a happy PXC journeys

Quorum

WAN

Partition Handling (Network Hiccup)

GTID

Node Sync

Getting the pieces together. You only have a cluster when you have the nodes connected and synced.

State Transfers

Group communication