

Nodes

Introduction

The core idea of the Node Proposal is to fix the issues caused by the Factions plugin currently implemented on the 4craft server. It does this by creating an entire replacement system for the Factions plugin.

Overview of Other Plugins

Factions is a plugin created by the Massivecraft group to permit organized PVP type gameplay, it was originally intended solely for the Massivecraft server. Since its public release, it has spread to become the primary plugin for nearly all sandbox PVP Minecraft servers, including the 4craft server series. Its market share and adoption are near total for its usage case. Factions performs its modification to the base gameplay by adding two core features to Minecraft; the Faction, and the Claim.

The purpose of a Faction is to facilitate organized warfare between two groups of players. They are simply a group headed by a singular Leader, with some power delegated to a group of selected players to act as Moderators. They have various powers over the Faction and its Claims. The remainder of players are designated as Members of the Faction, as well as an additional lower rank, known as Recruits. The Leader has absolute power over a Faction. Factions can modify their relations with other Factions in a simple four state system of alliance, trust, neutral, and war.

Claims are areas of land controlled by a Faction, comprising of a number of chunks, each measuring 16x16x256 blocks in size. Each player in a Faction generates a number of points used to claim each chunk. The Factions plugin allow a Faction to regulate what Members or other Factions can do within their claimed area. This is primarily used for block protection, to prevent other Factions from modifying any block within a claimed area. Claims can be lost if a Factions points fall below the number of chunks claimed, at which point an enemy Faction can override a Factions claim.

Citadel is a newer competitor, most famously implemented on Reddit's Civcraft server, that provides an alternative to the Faction Claim. Rather than providing absolute protection to an area, users can selectively reinforce certain blocks against destruction, meaning those who raid must break through blocks multiple times to breach a base.

Bastion, used alongside Citadel on Civcraft, provides yet another alternative to the Faction Claim. It introduces the concept of using sponges as a mobile force field to prevent anyone from placing blocks nearby, via a method similar to the Claim.

The Problem

The primary issue with balance throughout the history of 4craft, was between Destruction vs Protection. If it was too easy to destroy, no permanent bases would show up, and therefore there would be a high burnout rate of Players and Factions. However, if bases were too easy to protect, hardly any wars of actual consequence would take place, leading to boredom and stagnation. Since v1 this issue has been attempted to be fixed via various approaches, some more successful than others. v2 made it so that farms had to be above ground. v3 and v4 both added various tool "runes" to aid in war. v5 allowed limited construction on the height extremes of the map. While v6 and v7 both adopted a power decay method to reign in extensive claiming. None of these addressed the core problem of Factions; that it heavily encourages the construction of a single base. There is hardly any room for ablative defenses in the standard Factions plugin. For a loss to matter it must hurt a Faction, but with a single base a loss will also largely kill a Faction, leading to player loss and thus server death over time. There haven't been any measures to fix this thus far in 4craft, with only a few factions practicing the concept of multiple bases. Civcraft is similar in that while there are no inherent disadvantages to multiple bases as there are in Factions, there are no advantages to their construction either. People still by and large build single bases, albeit larger than their Faction equivalents.

The second large issue of Factions are the options towards government and diplomacy. There are only four standings allowed with another Faction, war, neutral, truce, ally. This limited system and consequence free switching lends to viewing relations as a minor issue. It also lends itself to backstab tactics, as seen in the betrayal of ASF by /a/ in v2, wherein they breached the ASF base while allied to them, then went directly to a war state versus ASF. The broad labeling also prevents specialization of alliances. The governance types are also highly restricted in Factions, again having only a four state rank system of Recruit, Member, Moderator, and a singular Admin. Factions who wish to have a Republic, for example, must rely on the good faith of those they put in charge to continue the practice.

A tertiary issue of Factions is the claiming system itself, which assigns points on a numerical basis rather than a player quality basis. Factions such as /m/ who have a combination of competent players but low numbers have traditionally been limited in base construction as compared to /v/, who typically get large numbers, but are by and large poorly equipped and trained. Despite the competency of the playerbase, /m/ has been forced to make extremely compact bases. It is an issue of quality vs quantity, with quantity winning out in all aspects in Factions.

A Deeper Issue

There are however deeper issues within Minecraft that prevent the game from being host to a more perfect PVP setting. The primary gameplay of Minecraft relies upon three aspects: production, building, protection. Building and Protection are the endpoint of the game, while production is a means to that end. By and large in a PVP setting the most entertaining aspects are the building and the protection. One doesn't come into 4craft with the express purpose of mining, they come with the purpose of mining to make a sword to kill someone. The problem is that the grind based nature of Minecraft's production system lends to *certain* Factions, who have the time and playerbase, to leap greatly ahead in technology over those who are smaller.

Previously this has been dealt with by limiting the maximum level of technology achievable, specifically by limiting enchantments and potions. As those two are the most material and time intensive objects in the game to produce, this serves to eliminate options in the name of balance rather than expand them.

The scarcity of resources, especially that of diamonds, has also been modified in 4craft frequently, with v3 having so few that even swords were a luxury. While ostensibly a measure made to limit the amount of diamonds in play, the scarcity instead further rewarded those with the player count required to grind for them.

The Solution: Nodes

The key part of the Node Proposal is the Node itself. It is defined as a fixed chunk on the map that is used for territory and resource control. Each Node will have three aspects: a Beacon, a Zone, and a Resource. Node control will be governed by faction capability and organic warfare, not arbitrary numerical superiority and semi-permanent claims. Nodes are captured by simply standing on top of them for a period of time, of course doing that is harder than saying that. Factions will be able to capture an arbitrary number of Nodes, only limited by map size and their abilities. Each Faction will choose a single specialized Core Node that will act as the central hub for their operations, hosting their spawn along with a specific Resource.

Zones

As a replacement for the claiming system of Factions, each Node will grant a swath of protected land, with a shape defined by the server owner arbitrarily. The protections of the land will resemble that of the Factions Claim system, but with more flexibility for balancing. Zones that are on the edge of a Faction's area can have a different protection level than those that are within the center of a Faction's area. This can range from allowing the destruction of natural blocks, to the placement of TNT.

Resources

To encourage warfare, each Node will grant a specific Resource, specified by the server owner per Node. This can range from a singular material such as 4 Iron Ingots, or a group such as a stack of each type of Wood. Each Resource drops on an arbitrary timer, specifiable individually. This is where the majority of difficulties in balancing rise from. Major items need their base components analyzed and placed on the map in certain amounts to provide incentive for conflict and availabilities, while not leading to a post-scarcity state.

War

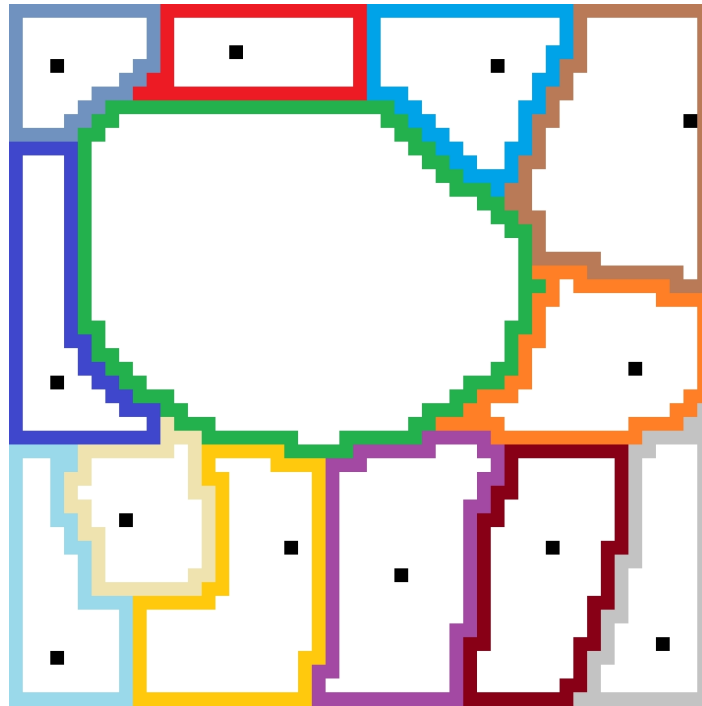
The end result of all of Nodes modifications is to allow a state of war where losses and victories have meanings within the context of the game, and not just within a meta. By delinking the protection system from an arbitrary selection of chunks as in Factions, and requiring expansion, it allows a Faction to lose land without losing everything. As an extension of this, war is planned to have certain regulations, such as occupation before an eventual peace; along with broad protections to prevent the total ruination of a Faction within a short time if it is above a certain size.

Progress

While concepts are all well and good, I realize a project like this will require much concrete work. I have so far developed an Alpha level plugin that contains the basics of protection, capturing, and resource production, along with basic Faction commands. The source for the plugin is [here](#), but I should warn it is undocumented, buggy, and likely horrifying to seasoned Bukkit programmers. I don't have much time to work on it these days, infact the only reason it has reached this state is because of an engineering class, so you shouldn't expect it to come out within the next few months without a group effort.

You can Comment by Highlighting and Right Clicking

Development Pictures



This is an example Node Map, the first used in development. Each pixel is a single chunk, each Zone has a unique color, and the black represents the Node itself. The plugin supports Zones without a Node, specifically to create a filler area such as for an Ocean.



The current ingame Map command, White being your current location.

