Preemption Statistics

## Overview

HTCondor supports preemption of lower priority jobs by higher priority jobs in several ways. Many users wish to completely disable preemption, but this is difficult to do. Many think they have preemption disabled but don’t get all the knobs set correctly across several daemons. HTCondor has no easy way for the administrator to detect whether preemption is happening and why. This ticket will start to allow easy detection when preemption happens at each startd by an administrator

Goals

1. Make it obvious that preemption is or isn’t happening at each startd in the system, and globally across the pool.
2. Advertise preemption count statistics in the startd ad

Motivation

While we have a complicated process for disabling preemption, we need an easy way to verify that no preemption is actually happening in the system.

## Proposed Solution

The proposed solution is to add statistics using the generic\_stats class to the startd to add bucketized counts of total number of preemptions, preemptions because of startd RANK, preemptions because of userprio, and total job starts. The last is useful because a preemption count of zero is not meaningful if job start count is also zero. These stats can then be passed to the ganglia monitoring system via gangliad.

The StartdAd changes

The Startd will get four new attributes, TotalPreemptions, TotalPreemptionsForRank, TotalPreemptionsForUserPrio, TotalJobStarts. These attributes will go into each slot ad, and be the global counts per startd, not per slot.

## Development Milestones

Milestones:

1. Modify the Start to measure and report new preemption statistics [2 days]
2. Documentation [0.25 days]
3. Future work: Push this information into the schedd and the user log. Have negotiator advertise current group allocations to ganglia.