

# PuppetMaster Release Notes

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## Version 0.3

### Upgrade Guide

1. **MAKE A BACKUP!** Open a new scene, delete the previous version and reimport.
2. If you were using `BehaviourPuppet.canActivate`, you should set `BehaviourPuppet.normalMode` to “Kinematic”.
3. If you were using `BehaviourPuppet.mapOnlyOnContact`, you should set `BehaviourPuppet.normalMode` to “Unmapped”.
4. To get rid of multiple expensive `SendMessage/ BroadcastMessage` calls per frame, `OnPuppetMasterRead`, `OnPuppetMasterWrite` and `OnPuppetMasterFixTransforms` will not be called anymore. Use `PuppetMaster.OnRead`, `PuppetMaster.OnWrite` and `PuppetMaster.OnFixTransforms` delegates instead. See the `IKBeforePhysics.cs` and `IKAfterPhysics.cs` for reference. If you add any IK components to the Target hierarchy in runtime after `PuppetMaster` has initiated, you need to add them manually to the `PuppetMaster.solvers` generic list.
5. If you are using Final-IK, wait until Final-IK 1.3 becomes available (will be updated simultaneously) and import the latest Final-IK Bridge from the unitypackage in `Plugins/RootMotion/PuppetMaster/_Integration`.
6. If your puppet starts sliding when getting up, set “Get Up Offset Prone” and “Get Up Offset Supine” to `Vector3.zero` in `BehaviourPuppet`.
7. If you have used the `CharacterMeleeDemo` character controller, change `UserControlPuppet` to `UserControlMelee` and assign the “Hit Key”.

### Improvements

1. Created the first version of the [bridge between PM and UMA2](#). Import to a project with both `PuppetMaster` and `UMA2`.
2. Added a warning if Target position doesn't match with the `PuppetMaster`'s position at initiation.
3. Added a warning if any of the muscle joint positions don't match with their target's positions (right-click on the `PuppetMaster` component's header and select “Fix Muscle Positions” to fix this issue).
4. Added a warning if mass variation between the ragdoll Rigidbodies is greater than 100.
5. Added a warning if one of the “Ground Layers” is included in the “Collision Layers” of `BehaviourPuppet`.
6. Added a warning if one of the ragdoll bones is on the same layer as the character controller.
7. Added a warning if one of the ragdoll bones is on a layer that is not set to ignore the character controller layer.

8. Improved blending from ragdoll to getting up. Puppets can now get up with much less `BehaviourPuppet.getUpKnockOutDistanceMlp`, increasing collision-reaction fidelity while getting up.
9. Considerably improved the performance and stability of `BehaviourPuppet`.
10. Named the “Muscle Group Overrides” in `BehaviourPuppet`’s Editor so the right one could be more easily found.
11. New larger header attributes (easier to read, especially when dealing with edited prefabs that have some fields in bold).
12. `BehaviourPuppet` will activate itself on initiation only if it is enabled at that time. That enables you to start from another behaviour such as `Fall` when you disable `BehaviourPuppet` in the Editor.
13. Added “Max Collisions” value for `BehaviourPuppet` as an optimisation. The behaviour will not process more collisions than this in each physics step.
14. Added the “LookAtIK” demo to the Final-IK Bridge.
15. Added the “AimIK” demo to the Final-IK Bridge.
16. The demo character models can now be replaced with any Humanoid character in the scene, fbx or ragdoll simply by going to the “Character Controller” gameobject, assigning a “Replace Character Model” and clicking on “Replace”.
17. Improved puppet-puppet head-on collision handling, no more bouncing back from the standing bot.
18. Added the “Creating Ragdolls In Runtime” demo scene and script.
19. `BehaviourFall` now keeps the Target close to the ragdoll. That will help with camera scripts and `SkinnedMeshRenderer` culling.
20. Added `PuppetMaster.state` to make it as easy as possible to switch between Alive, Dead and Frozen states. Frozen means all physics components will be deactivated when the puppet is killed and rigidbody velocities below a threshold and unnecessary calculations skipped.
21. Added the “Killing” demo scene.
22. Added an interpolated puppet example to the “Puppet Extended” demo scene.
23. Added warnings to `PuppetMaster` when `Animator.cullingMode` is not “Always Animate” or `SkinnedMeshRenderer` “Update When Offscreen” is false.
24. Simplified the Prop component.
25. Extended the Melee demo, added walls, collision objects and the Teddy to demonstrate bumping into larger and heavier characters.
26. Added the Final-IK Bridge, UMA2, Ootii’s Motion Controller v2 and others to “Plugins/RootMotion/PuppetMaster/\_Integration” as unitypackages.

## Fixes

1. `BipedRagdollCreator` now forces joint anchors to `Vector3.zero`.
2. Behaviours will not fail when UMA replaces the Animator in runtime.
3. Removed `JointDriveMode` warnings from Unity 5.3 and later.
4. Fixed Grounding the Target when getting up.

5. Fixed a bug that twitched the puppet when “Can Activate” and “Deactivate Automatically” were selected.
6. Fixed a Null Reference Exception when a Booster was created in runtime.
7. Fixed negative collider sizes created by BipedRagdollCreator that were a problem with Unity 5.4.0B1.
8. BipedRagdollCreator will not let itself to be added on any other gameobject but the root of the character.
9. Fixed a bug with PropRoot and assigning currentProp at Start();
10. PuppetMaster will notify you if you try to run it in Unity 5.1 (requires at least 5.2.2).
11. Fixed a bug with the Target not mapped to the ragdoll each frame when ragdoll bones were set to interpolate.
12. FixTransforms will work for Props even when PuppetMaster.fixTransforms == false, because they are most likely always unanimated.
13. Removed PuppetMaster.broadcastGroundCollisions.
14. Muscles with Pin Weight set to 0 will also unpin the puppet when they get too far.
15. Disabled a bug with internal collisions not being ingored when internalCollisions == false and switching from Disabled to Active or Kinematic mode.
16. Setting PuppetMaster.mode to Disabled or Kinematic will only execute when the behaviours allow it. That means you will be able to safely Disable a puppet based on distance to another puppet without the puppet getting disabled while in Fall behaviour or getting up.
17. Fixed BehaviourPuppet.unpinnedMuscleWeight not working when BehaviourFall was also used.

## Changes

1. Changed BehaviourPuppet.canActivate and BehaviourPuppet.deactivateAutomatically to a single enum: BehaviourPuppet.normalMode.
2. To get rid of multiple expensive SendMessage/ BroadcastMessage calls per frame, OnPuppetMasterRead, OnPuppetMasterWrite and OnPuppetMasterFixTransforms will not be called anymore. Use PuppetMaster.OnRead, PuppetMaster.OnWrite and PuppetMaster.OnFixTransforms delegates instead. See the IKBeforePhysics.cs and IKAAfterPhysics.cs for reference. If you add any IK components to the Target hierarchy in runtime after PuppetMaster has initiated, you need to add them manually to the PuppetMaster.solvers generic list.
3. Moved SolverManager to RootMotion namespace, allowing it to be used by other assets besides Final IK.

## Version 0.2 (10.12.2015)

### Upgrade Guide

8. **MAKE A BACKUP! Open a new scene, delete the previous version and reimport.**
9. “Collision Layers”, “Collision Threshold” and “Walkable Layers” have been moved from PuppetMaster to BehaviourPuppet (“Walkable Layers” renamed to “Ground Layers”). They need to be reassigned so before importing 0.2, make a note of those settings in PuppetMaster.

### Improvements

10. Added Collision Resistance Multipliers to the BehaviourPuppet. You can now specify how much objects unpin the puppet based on their layers.
11. PuppetMaster “Target Root” disappeared from the Inspector. It will now be found automatically. This simplifies setup process for custom rigs.
12. PuppetMaster “Behaviour Root” disappeared from the Inspector. It will now be found automatically. This simplifies setup process for custom rigs.
13. Final IK components and your own scripts using OnPuppetMasterRead/Write can now be added to every gameobject in the Target hierarchy (disable this by setting puppetMaster.broadcastMessages to false to improve performance, but all IK/script then need to be on the root gameobject of the Target hierarchy).

### Fixes

18. Fixed some bugs with removing components when setting up PuppetMaster.
19. Removed JointDriveMode obsolete warnings from Unity 5.3.
20. BipedRagdollCreator now looks for an Animator in the entire hierarchy.
21. Setting up PuppetMaster now parents the rig to the same parent that the PuppetMaster gameobject was parented to.
22. Setting up PuppetMaster will not remove Cloth colliders on in the target rig.

## Changes

1. Moved the animator states required by BehaviourPuppet and BehaviourFall to Sub-State Machines in the demo AnimatorControllers so they are easier to copy to your own controllers. When you copy the “BehaviourPuppet” Sub-State Machine to your own controller, just make a transition from it to the state you wish to go to when the puppet has got up. No need to make a transition from the “BehaviourFall” SSM.
2. Moved collision and ground layer masks and collision threshold from PuppetMaster to BehaviourPuppet. This simplifies setup process for custom rigs and improves performance.

**BETA (0.1) - 18.11.2015**

Initial Release