Research Investigating Generation-Beyond-Next Computer Game Culture and Technology:

A Collaborative Research Partnership between the UCI Game Culture and Technology Laboratory and the Daegu Global R&D Collaboration Center

Progress Report

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Introduction

The report documents progress and results obtained from our research study that is investigating generation-beyond-next computer game culture and technology during the period of 1 January 2008 through 30 June 2008. This study is in support of a collaborative research partnership between the UCI Game Culture and Technology Laboratory and the Daegu Global R&D Collaboration Center, in Daegu, Korea. The initial scope and research areas for study was agreed to by both partners in December 2006, and that served as the basis for effort initiated during this project reporting period.

Project Plans and Activities for 2008

First, based on the results of activities and meetings (in Daegu and Irvine, as well as via video-conferences) through the end of 2007, we believe the best course of action to pursue for 2008 includes a number of activities. These include the following activities: (a) organize, prepare, and present a lecture series of up to 20 lectures on the future of computer game culture and technology; and (b) engage in the ongoing development and enhancement of tools, techniques, and infrastructure that can further link the UCI GameLab to the Daegu Global R&D Collaboration Center, DIP, and others in Daegu (this is the first topic in our original research proposal). We believed this later activity should include extending and enhancing the DinoQuest Online (DQO) computer game environment that we have previously developed at the UCI GameLab to incorporate new tools and functional capabilities that will allow for: (i) DQO game play in English and Korean; (ii) Korean-English multi-player communication through localized game conversation languages; (iii) extension of DQO to provide core functional support for massively multi-player online games; (iv) provide new end-user oriented tools for DQO (or DQO-like online game environments) that support the concepts and techniques for user created content that allow users to modify existing or develop new game content; (v) addition of
related computation services that support “social networking” and related communication capabilities for DQO end-users; and (vi) demonstrating how these functional capabilities can enable the creation of casual games or casual MMOG-style games, which were highlighted as an emerging trend in the U.S. Computer game industry over the next 2-5 years during the Fall 2007 video lecture series.

Second, our efforts in this first area changed directions in that early 2008, we soon came to realize that adding these enhancements to the DQO game, game engine and Web-based run-time environment was a major undertaking that would take much more time and resources than we were prepared to allocate. As a result, we revised our plan in this area to instead focus on the development of a new game engine and run-time environment that would still be rooted in Flash technology (including a Flash media server), along with a new game that might better serve to identify where multi-user collaboration activities could be supported. This effort subsequently became known as the WTF?! Game, and game engine (hereafter WTF?! 1.0), as well as an integrated software development kit that could enable user created modification or creation of games like WTF?! Later sections of this report provide ample document of the results of work in progress on WTF?! 1.0, which were initially deployed on the Web in May 2008. Experience reports from users across the Web indicate that people in at least 20 different countries provided feedback on WTF?! 1.0, and that discussion items or write-ups were posted on more than 1000 distinct Web sites worldwide.

Third, we also determined that a reliance on game or collaboration services that would need to depend on a Flash media server as a mechanism that can support the back-end of a massively multiplayer game run-time environment. However, we quickly came to realize that such an approach would potentially lead to high-priced server licenses (from Adobe who markets a proprietary Flash media server) in order
to produce Flash-based games (like DQO and WTF?!?) that support massively multiplayer online games and game play, as well as social networking services. Subsequently, we undertook a search to determine whether there might be an open source software media server that we could use in place of Adobe's Flash media server. We found a number of candidates in various stages of development or operational use. Based on a review we conducted (including downloading and installing software servers from the different sources), we settled with an open source software system called Red 5 media server (see http://osflash.org/red5 for more information on this server). Preliminary results from our work in progress with Red 5, including sample application programs (clients) that we have developed are described near the end of this report.

Fourth, it came to our attention that our friends and colleagues at DIP proposed a change to the original research proposal, by recommending that one full-time research associate from DIP be able to come to work and be paid with project funds at a full-time (100%) level at the UCI GameLab. A review of the project budget and contract indicates that at present, the project budget and contract call for such a person designated by DIP to join the project at a level that is only funded by a 50% level from the research project funds. Thus, in order to support this person at a 100% level with project funds, we had to reallocate a portion of our budgeted funds to support new project direction. During the Spring 2008, along with our friends and colleagues at DIP, we undertook a search for someone from South Korea who could come to work with us here at the UCI GameLab for the remainder of the project. Candidates were identified, and the best two were selected for interview by videoconference. As a result of this effort, Mr. Yongnam Jeoung was selected as the top candidate and he was invited to join the project team at UCI, during the third quarter of 2008.
Fifth, after phone, email, videoconferencing, and face-to-face meetings through the Spring of 2008, it became clear that there was a need to reset project priorities due to a drop in the exchange rates of KRW to USD. While neither DIP nor UCI can control international monetary exchange rates, the net outcome would be that the project budget would need to be reduced, and thus project activities and expenses downsized to meet the available resources. An agreement in principle was reached in May 2008 for how to proceed, with both UCI and DIP agreeing to the terms for resolving how much remaining funding could be provided to the project. Subsequently, the statement of work within the project proposal was revised to meet the agreed to terms and conditions. However, both parties recognized that any further reductions in the project funds would required additional downsizing of the project effort. Nonetheless, both UCI and DIP are committed to working within the available resources to help make the project a success, and to produce results and findings that can serve as a basis for future research collaborations.

With this project background in mind, we now turn to identify and describe the materials that are included in the remainder of this progress report for 1 January 2008 through 30 June 2008.

**Project materials and results**

There are research project materials and results in each of the following areas: (a) work in progress reports including selected specifications, example code, visual images, and Web pages from the WTF!? 1.0 networked, single-user, side-scrolling, role playing game and game engine; (b) work in progress overview of early experiences with the Red 5 open source Flash media server; (c) preliminary report demonstrating “game modding” as an approach for developing new computer game-based applications in training semiconductor or nanotechnology fabrication technicians.
Progress in the development of a new game engine and game (WTF!?)

At the end of 2007, we were optimistic regarding how best to develop and extend the DinoQuest Online game engine and run-time environment so as to better support large numbers of concurrent users. However, on close review, it became clear that this would not be a straightforward enhancement, but instead would represent a major overhaul and refactoring of the DQO software and data architectures. Subsequently, we decided to undertake development of a new game engine, run-time environment, and software development kit that would be a better match to our functional research objectives. As such, we put the DQO into the background, and started development of a new Flash-based game engine, run-time environment, and an XML-based SDK that could more readily be integrated with other collaboration tools/services to eventually support large numbers of concurrent users who can also modify or create games that operate in this environment.

As such, this reports include extensive documentary results of work in progress on the WTF!? 1.0 game, game engine, and their Web based deployment. Although these results are somewhat voluminous, the materials presented here are not all inclusive, meaning there is still more material to this activity. As such, in order to access all of the documentary materials for WTF!? 1.0, it is recommended that you should go to the WTF!? Web link at [http://www.aoedipus.net/dist/wtf_local.zip](http://www.aoedipus.net/dist/wtf_local.zip) to access and download the WTF!? 1.0 materials and run-time environment. Warning, when downloading these materials, the amount of source code materials is substantial, so hundreds of pages should be expected, though it is much better simply to browse these materials online, and to share them with others in an online manner, rather than to print them.
**Early experiences with the Red 5 open source Flash media server**

As suggested earlier, in order to support both large numbers of concurrent game players/users, as well as to enable support for both user created content and multi-user collaboration, we decided to install and develop new services using the open source Red 5 Flash media server. The Red 5 server is still in development (not yet at version 1.0) but it appears to offer substantial and scalable audio and video streaming services, which we believe we can adapt to meet our needs. Accordingly, later in this report we provide an overview of some of the capabilities of Red 5 that was have been working with, as well as some early prototyped application services that we have developed along the way.

Subsequently, there is a 20 or so page presentation that provides an overview of the Red 5 open source media server, along with early examples of prototyped applications running with this server.

**Game modding as a way to develop serious games for industrial applications**

One of the focus areas of our project includes investigating the development and use of new tools and techniques for creating networked, multi-player computer games. Results in this area focus on an exercise in prototyping a computer game-based application intended for use in a modern enterprise setting (i.e., a “serious game”). Based on access to and observation of activities in Integrated Nanosystems Research Facility (INRF) located within the UCI Calit2 building, we undertook the development of an advanced manufacturing simulator that was realized as a modification to a commercially available computer game (a game mod). We started with a retail version of the *Unreal Tournament 2004* computer game (purchased for $10). This game employs the Unreal 2 game engine and provides a software development kit (SDK) and networked game server that are integrated with the game engine. These allow the creation and use of first-person, action-oriented game content/assets and
multiplayer games that run over the Internet and support up to 32 concurrent users. However, since we started this effort in late 2007, a new version of the Unreal game engine (i.e., Unreal 3) and SDK have been released, which we have recently acquired, along with new versions of Autodesk 3D Studio, Adobe Photoshop, and other tools supporting game development, deployment, or documentation.

A preliminary description that documents our approach to the initial development of such a simulator is found at the end of this report. In it, we provide examples of the use of different tools including the Unreal 2 SDK (floor plans and object layout), Autodesk 3D Studio (graphic models of objects), and Adobe Photoshop (photographic textures attached to graphic object models). We also briefly characterize how the simulator might be used as a serious game for training manufacturing technicians in the proper operation and diagnostic servicing of the manufacturing machine, especially when the manufacturing setting is a clean room where the discovery of liquids represents a hazard, and thus the need to determine the nature of the spilled materials and which manufacturing machine may have caused the spill.

Subsequently, there is a 20 or so page preliminary report that describes our approach and results to the development of a prototyped manufacturing simulator that might be used to train manufacturing technician in the proper operation and diagnostic service of the complex machines found in an advanced manufacturing facility.

Finally, we believe our efforts are proving to be highly relevant to companies engaged in advanced manufacturing activities. In particular, we have been approached by people from Intel Corporation who
have expressed interest in funding further development and evaluation of this manufacturing simulator, as well as how well serious games can be developed and deployed for training and operational diagnostic applications in large, multi-national corporate environments.

**Research project activities for 1 July 2008 through 31 December 2008**

We plan to continue our research efforts in each of the three areas identified in the previous section, as well as how to integrate them. In particular, we continue to explore how best to integrate the open source video and teleconferencing services that can be supported with the Red 5 Flash media server with the WTF!? 2.0 game engine and development environment, as well as with the collaboration infrastructure we have also been exploring at the UCI GameLab. We are also looking into the upgrade of the FabLab manufacturing training simulator to incorporate the newer Unreal 3.0 game engine and SDK, which represent a state-of-the-art game development and run-time environment, as well as to transition to new versions of game development support tools like Autodesk's 3D Studio and Adobe Photoshop. These upgrades will allow us to better take advantage of the relative ease/difficulty in designing, prototyping, and deploying serious games which can be used to address problems and opportunities in large enterprise settings, rather than just seeing games as entertainment media.

**Final Remarks**

The remainder of this report is far more voluminous than this overview. This is as it should be in our view, as what follows are the second round of results from our research project covering just the period of 1 January 2008 through 30 June 2008. Whether the diversity and volumes of results that follows is indicative of what will be produced in the research period ahead is unclear. So please do not assume that what follows reflects what to expect in the near future. Instead, please view the remaining materials with an eye towards what research or directions might be investigated in the months or years
ahead. We will of course have the opportunity to discuss and review these materials through video-conferences and other meetings during the remainder of 2008.

As such, we now present the detailed Project materials and results of our research efforts during 1 January 2008 through 30 June 2008 in the pages that follow.
Progress in the development of a new game engine and game (WTF!? 1.0)
Welcome! You've stumbled into WTF?! - a WoW inspired side-scrolling Flash-based RPG.

**Scenario:** The time/space continuum of Azimuth has enfolded. A Rift Lord's unwittingly opened a portal from the earthly netherworld, and the place is crawling with infamous historical thinkers, like Karl Marx, Sigmund Freud, and Mary Daly, each of whom is trying to enlist your help in effort to figure out WTF Azimuth is all about. And... as you might imagine, there's plenty of conflict as they attempt to make sense of the ways in which, as Mary Daly puts it, "the game naturalizes a Western militaristic heterosexist hypersexualized patriarchal capitalism, played out in relation to a spiritually infused race war - kinda."

It's an ideological revolt, or perhaps it's just ideologically revolting. Something is definitely afoot. You must choose whom to align with as competing factions attempt to find the means to wrest control of Azimuth away from whomever, or whatever, currently holds power. Think WoW meets social theory meets game studies meets, well... tabloid journalism... since you also dig up plenty of dirt about some of these characters along the way. Woot!

In this first installment you can play **2 main characters**, quest in **4 unique zones**, interact with over **15 NPCs**, and advance to **level 10-ish**... but be patient, it's ~5.8 MB file that needs to load. The core functionality and game mechanics are present, but only a sampling of the content to come. And maybe that's a good thing...
WTF!!

Built with our **freely available** Sorta-SDK to facilitate your own abusive game designs!

**Note:** This software is not officially sponsored by or directly associated with either the World of Warcraft developers at Blizzard Entertainment or their publisher and parent company Vivendi Universal, as if... ROFL.
If you're new to role playing games...

Getting started with WTF?!...

Gameplay tips and tricks...

Note: This software is not officially sponsored by or directly associated with either the World of Warcraft developers at Blizzard Entertainment or their publisher and parent company Vivendi Universal.
oor Performance? Well then...

Be patient, the initial download takes a while for a lot of reasons (see "Download and Play!" below). After the first time it should be faster. We're flirting with the edges of Flash sanity. So, if you experience low frame rate, open your Prefs and turn Particle Effects to low or off, turn Day/Night cycles off, and turn Weather off. Sound and floating Combat Text should not heavily impact frame rates, so you can probably leave those be. Finally, closing other graphics intensive apps you may have open in the background, including other web pages, will help.

ownload and Play! Instead of just "Play" :

Due to Bandwidth Drama that's resulted in our being throttled by our service provider (QQ)... for the time being you may opt to download a ~9.4MB .zip, extract, and run WTF?! locally. We really apologize for this, but we did not anticipate the traffic we've been getting, nor the response to that traffic.
Note: This software is not officially sponsored by or directly associated with either the World of Warcraft developers at Blizzard Entertainment or their publisher and parent company Vivendi Universal.
ou found it! So what is "I" pray tell?

"I" is a suite of Flash tools formerly known as a "WoW inspired side-scrolling, Flash-based, RPG, SDK"... which was a mouthful. We built 'em to help make WTF?! It's 100% freeware for you to do whatever with! Here's some screenshots.

NOTE: We're posting everything in a .zip file (~19.6 MB download), including all the game and art assets used for WTF?!. We're porting the code base to CS3, but it's gonna take a while, so until then... WYGIWYG. BTW, the documentation is gimp, and the support's practically non-existent. But hey! What did you expect for the price?

Actually, we've put together a few XML Scripting Guides for starters, and will do more as needed:

---- XML Scripting Guides ----
Software Development Kit Features

Engine

- Robust side scrolling action RPG game engine
- Support for terrain maps with parallax scrolling
- Support for multiple simultaneous npc and player characters with highly customizable behaviors
- Sophisticated fast-paced combat system
- Complex inventory and equipment management
- Wide range of abilities and spells which can be designed from scratch
- Particle effects system
- Shortcut and hot-key access to inventory/equipment items
- Robust quest system supporting kill, collect, escort, and special quest types
- Adjustable quality settings

Environment

- XML script support for all environmental definitions
- Ability to create levels from scratch using bitmap images or other flash based graphic assets
- A looping background forms the base of a layer
- Static objects can be placed on top of a looping background
- Static objects can be chosen as key points for display on an in-game map
- Icon definition for NPCs for in-game mapping
- Speed of layer scrolling can be defined independently
- Layer scrolls automatically based on pre-defined speed
- Time of day definitions with customizable tinting for every individual layer and object
- Color tint blending based on the player's system clock time
- Weather table, weather specific layer tinting, and layer specific special effects
- Spawn location definition for transition from other maps
- Exit location definition for transition to other maps
- Location and area specification for character and item spawn points
- Spawn rate and requirement definition (level/class/quest/etc) for NPCs, players, and items
- Background music definition and automatic fading during map transitions
- Event sound definition attached to NPCs, players, and items

Characters

- Ability to create and place characters into the game with defined animation types via XML scripts
- A free form identity list that defines the parameters to categorize characters in game
- Faction definitions to identify characters that cannot attack each other via "friendly fire"
- Custom definitions for hit timing and location, hit boxes, ability activation timing and position
- Character statistics kept for strength (melee damage)
- Character statistics kept for stamina (health)
- Character statistics kept for intelligence (mana)
- Character statistics kept for spirit (health/mana regeneration)
- Character statistics kept for armor (melee damage reduction)
- XML support for defining the value of each basic statistic by level
- XML support for defining experience given per kill and amount of experience needed to reach next level
- Ability to randomize NPC level range at spawn point
- Tinting (hue, saturation, brightness, contrast, alpha)
- Basic animation rigging (including character speed/trajectory, animation looping, animation effects)
- Repetition (variants of single or looping animations)
- Tweaks linked to game mechanics (attack/throw/activate ability animations with damage force and effect parameters)
- Sound effects
- Behavior table for state based decision making
- Basic awareness of distance between characters
- Ability to track a single target and react to that target's behavior
- Built in stealth system to limit targeting effectiveness
- Instant reaction to damage and special triggers
- Decision making based on health, mana, and equipment availability
- Ability to follow, evade, attack, throw, change equipment, and activate trinket abilities
- Dialog system supporting linear chat with lines that can be chosen randomly
- Ability to trigger dialog in relation to specific behaviors

Loot and Experience

- Ability to award player with experience based on damage percentage
- Slot based item drops that evaluates the drop list of each slot independently
- Quest or NPC based loot drop definitions

Inventory

- XML script support for custom icons (as represented inside the inventory and as an in-game pick-up item)
- Equipment slot and rarity (common, uncommon, rare, epic) definition
- Basic statistics
- Items can be defined that have situational abilities
- Uniqueness (total carried limitation) and stacking (maximum carried per inventory slot)
- Ability to include "Flavor" text

Equipment

- General equipment (slots for head, neck, shoulders, chest, back, shirt, wrist, hands, waist, legs, feet, 2 fingers, relic)
- Main hand weapon (with support for basic damage range, attack speed, in-game appearance,
and damage effect)

- Thrown weapon (directly linked to a specific projectile, automatically tracks ammo)
- Trinkets (activated by casting, reusable, interruptible by movement or damage taken)
- Consumables (activates abilities instantly, consumes item in the process)
- Usable Quest Items (activates abilities instantly, does not consume item)

### Projectiles and Spell Effects

- XML support for defining appearance (basic form, trailing effects, impact effects, splash effects)
- Ability to define statistics (damage range, impact force and angle)
- Define trajectory (initial velocity, acceleration, gravity toggle)
- Reaction to hitting ground (disappear, stay, bounce, splash)
- Splash damage
- Definition of abilities that activate on impact

### Abilities

- Projectile Firing
  - Direct damage/healing
  - Damage/Healing over time
  - Damage absorbing shields
- Temporary effects on basic character statistics
- Temporary/Permanent summoning of other characters
- Temporary attack speed/cast speed adjustment (player only)
- Temporary run speed/jump height adjustment
- Control effects (fear, stun, incapacitate, banish)
- Stealth Activation
- Mana/Health cost/buff
- Support for abilities that trigger on melee attacks, spell casts, or damage taken
- Support for the ability to affect the user or the impact target
- Support for special effects attachment to instant and time based abilities
- Automatic generation of appropriate descriptions for active abilities

### Special Effects

- A particle system that generates visual effects based on the duplication and manipulation of a single seed image
- XML script support for pre-built static animations
- Particle spawning and respawning
- Spawn location definition
- Definition for particle trajectory, acceleration, initial size/alpha/angle, size/alpha/angle change over time
- Ability to attach sound to particle effects
Quests

- A text based quest system with automatic objective tracking and text formatting
- Full XML script support for title, basic, detailed, in progress, and completion descriptions
- Quest requirements based on the requirement system (level/class/etc)
- Objectives tracking (kill objectives, collection objectives, escort objectives, character state objectives)
- Completion rewards (gold, experience, and items)
- Tracking of quest/behavior/item equip/spawn requirements
- Ability to do identity, level range, and progress checking
- Support for grouped check lists (either one or all of the above)

Miscellany

- Ability to define any NPC as a Portal Master
- Ability to define any NPC as an Item Vendor

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screenshots of Developer Tools
article Effects Editor... Design and test custom particle effects, highly optimized, based on duplication of single seed image; attach sounds to effects; trailing, impact, splash, and change over time effects; and much more...
uest Editor... Define completion rewards (gold, experience, and items); identity, level range, and progress checking; support for grouped check lists; automatically export quest as XML; and much more...
tem Editor... Define Item stats for any equippable slot; create temporary effects on basic character statistics; allow summoning of other characters; set run speed/jump height adjustment; create control effects (fear, stun, incapacitate, banish); stealth activation; automatically export item as XML; and much more....
PC Editor... Test items in "Paper Doll" editor to do NPC item/level balancing; see how item stats change based on class type; automatically export NPC as XML; and much more....
**evel Editor**... Define any number of looping background layers; independent speed of layer scrolling; import and position objects in real-time; set spawn locations, level range and density for items and characters; specify zone exit/entry locations; weather table and layer specific effects; automatically export level as XML; and much more....

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XML Scripting: Overview

or those of you who are interested in going into the xml files and changing the content of the game, here is a quick overview of the files that are inside the resource folder and what you can do to edit them.

Inside the rsc/xml folder, you will find the following files:

**effect_list.xml** This file defines all of the particle effect scripts inside the game. The script takes a particle seed (which are graphic resources embedded inside the flash file) and uses the script information to calculate the position and motion of the particles.

Once created, special effects can be triggered by a variety of situations, the most common of which being melee/spell impact effects.

**item_list.xml** This file defines all items used inside the game. Each item uses a 37x37 icon commonly stored inside the rsc/img/items folder to define its appearance.

Most items can have a proc/activate ability - spell-like abilities that triggers when the user performs specific actions. How they are triggered depends on the definition of the proc and the item slot of its host item.

Currently, the easiest way to create new items is to make use of **item_budget_editor.swf**; however, the editor does not support some of the late additions such as melee triggered abilities.

**level_chart.xml** This files defines the base values of all character stats for both players and NPCs for each character level. The numbers are not cumulative, and each entry in a list represents one level, starting from level 1 for the first entry. You can use char_level_editor.swf to generate a level chart with linear number progressions.

**npc_list.xml** This file defines the appearance and behavior of all NPCs in the game. The process is quite complicated and it might take some time to get used to the behavior scripts, so here’s a few simple tips to start with:

- The state table defines all the animations that appears inside a particular character state. All characters defaults to start at the "normal" state. The animation names (the anim property) corresponds to the frame label inside the character movieclip (and therefore cannot be changed unless the source file is changed).
- The NPC will try to queue up actions when the action queue is empty. The AI would look through the behavior table from the top down, selecting the first pattern where all conditions
are satisfied and populate the action queue with actions from that pattern only.

- All NPCs can track a single target, and all range checks and horizontal movements are relative to the NPC's current target. The default target is "none". In this state, all range check conditions that does not specify a faction/character would resolve to false, and all movement directions are random.

**player_list.xml** This file defines the appearance of all playable characters in the game. The character names are currently referenced directly from the source code, so they shouldn't be edited unless the source code is edited to reflect the change as well.

**portal_list.xml** This file defines all the names and filenames of zones that the portal masters can teleport the player to.

**projectile_list.xml** This file defines all the magical and non-magical projectiles that can potentially be thrown. For thrown weapons, the name of the projectile must match exactly with the name of the inventory object that represents the thrown projectile.

A special note must be made for the often used "blank projectile", which contains no graphics (and therefore can't actually hit any object directly) and is most often used to create an AOE attack by using the subsequent splash portion of the projectile when it despawns.

Currently, all projectile graphics are compiled along with the source file and so the source file must be changed in order to create new projectile graphics.

You can generate a template for projectiles from creating thrown weapons/projectile activating items in **item_budget_editor.swf**.

**quest_list.xml** This file defines all of the quests that can be given to the player in the game. **quest_budget_editor.swf** can be used to generate a template (and do some simple experience calculations) for a single quest.

**zone_XXX.xml** These are the zone files. Each file defines the properties of a single zone, including background graphics, day/night tinting, weather cycles, and spawn positions. Currently, **level_editor.swf** can be used to visually place static objects and NPC spawn points from a zone template. Background layout, layer spawn points, spawn conditions, and time/weather conditions must all be manually scripted, but will be retained when they are imported/exported through the level editor.

**object_list_XXX.lst** These files are supplements to the level editor; they're simply a list of object paths (with a given name) that can be loaded from **level_editor.swf** and serves as a shortcut to ease the job of finding resources to populate a level with.

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XML Scripting: SFX

The "!" SDK has a fairly robust particle system that can be taken advantage of to produce all sorts of interesting particle effects. This tutorial will allow you to create - and test - a particle effect of your own to play around with and/or add to your own projectile/trinket/action. Without further ado, let's get started!

Unfortunately, the particle XML script is the only XML script type that has no helper flash file support whatsoever... but then again, it is fairly easy to create one from scratch. Just follow these deceptively difficult steps...

First, let's begin by copy and pasting this template into the bottom of effects_list.xml, between the last </effect> tag and the </effectList> tags:

```xml
<effect>
    <name></name>
    <base></base>
    <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="10" maxAmount="20" />
    <speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0" />
    <size startMin="100" startMax="100" changeMin="0" changeMax="0" />
    <alpha startMin="100" startMax="100" changeMin="0" changeMax="0" />
    <rotate startMin="0" startMax="0" changeMin="0" changeMax="0" />
    <duration>1000</duration>
</effect>
```

Well, the rest is going to be simple fill in the blanks, and who doesn't like doing that? Right... ur, let's get to it anyway!

First of all, we'll give this effect a name, so let's put "cool_effect" between the <name> tags. Since this is going to be a "cool" effect, we'll use one of our ice particles for this job... so put in "ice" between the <base> tags. Since the rest of the list is filled out, we're actually ready to test this thing!

Oh, in case you're wondering, the <base> tags refer directly to a library link of a movieclip inside the source file. Unfortunately, you can't create any new base particle types unless you edit the source file... but hey, the ones that do come with the source file is pretty varied, and they should be able to handle most generic RPG spell type things...

Fire up sfx_tester.swf. You're going to be going back to this file a lot so just keep it minimized even if it's not in use. The white rectangle represents the size of a typical character, so you can use that as a reference point to test character based effects. Let's type in "cool_effect" in that big text box at the bottom and hit the "Spawn" button.

Well, some ice particle appeared, and then they disappeared. They're kind of sized improperly, all lined up straight, and generally very boring. First of all, let's put some motion into these lifeless particles. Onwards with the editing!
Let's give our particles some explosive effects. Under the <speed> tag, change the spawnPattern parameter to "starburst" (for your information, other valid entry names include "implode", "side", "rising", "falling", and "wave". I'll leave it up to you to experiment what each of them does). The startMin/startMax parameters define the initial velocity of the particles. Let's set startMin (under the <speed> tag) to 3 and startMax (likewise) to 6. We'll leave the changeMin/changeMax part alone for now. Save, switch back to sfx_tester.swf, and hit the "Reload XML" button. You'll see the changed effect, and you can hit "Spawn" if you want to see it a few more times.

Okay, a little better, but still pretty lame. Let's make the ice fall down as they fly out. Let's change the movePattern parameter to "falling", changeMin (under <speed>) to 0.3, and changeMax to 0.6. Save, switch back (you'll be doing this a lot so get used to it...), and hit "Reload XML". This effect is certainly more interesting than the last - notice that the falling effect is cumulative, which is why we're using such small numbers compared to the initial values.

Finally, to fluff up the effect (and fix that wierd lined up look of the particles), let's make changes to the size/alpha/rotate tags. They all work quite similarly - the starting value (startMin/startMax) determines the starting percentage (except for rotate, which sets up the angle between 0 and 360) of the attribute being referenced (size/alpha/rotate) and the change value (changeMin/changeMax) determines how that percentage (or angle) changes over time. Here is my settings:

```
<size startMin="60" startMax="100" changeMin="-1" changeMax="-3" />
<alpha startMin="100" startMax="100" changeMin="0" changeMax="0" />
<rotate startMin="0" startMax="360" changeMin="0" changeMax="0" />
```

The size of the particles got adjusted so they start out smaller. You'd also see them scale down as the effect continues, due to the negative size change. I made the initial rotation go between 0 and 360 (full range) so it'd have this nice randomness to it when it spawns.

Well, the effect is now ready for you to place into whatever projectile/trinket/action you want. This particular effect seems to work well as the bleed effect of an Ice Golem... anyway, enjoy and have fun!

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XML Scripting: NPC Creation

Scripting NPCs is actually pretty complex. In order to cut the tutorial short we'll assume that the reader is already familiar with XML and can write up data tags at will. The tutorial will instead focus on the planning and creation of the state/action/behavior portion of the NPC script.

For this example, we'll borrow the shadow figure male model (used for all the secret sect members and all versions of Hegemon), since there's a fairly diverse library of animations from that character that's ready to use, should you choose to expand on this basic NPC framework.

Before we actually get to the actual scripting, let's try to sit and think a bit on what the NPC would ultimately be doing. For this example, let's design the NPC as a simple wandering mob that aggros when the player (or any other hostile target) hits him. Obviously, the character behaves differently when he aggros as opposed to when he's simply wandering around, and each of these "general condition" of the character warrants a separate character state. With that in mind, let's get started!

Let's open up some space at the bottom of the npc_list.xml and start with the basics. We'll setup the base information for the NPC:

```
<npc dispName="Shadow Guy" name="shadow_guy" id="generic_male"
    portrait="gm_portrait" profile="gm_profile"
    isElite="false" level="2" levelVar="0"
    hue="0" saturation="0" brightness="0" contrast="0" alpha="100"
    gravityBound="true">
</npc>
```

Most of the parameters are pretty self explanatory, and id links directly to the library movieclip object that defines the character animations. A note to custom animation creators - don't forget to link the NPCTemplate class to your custom character animation movieclips!

Let's set up some base information for the character's identity. A lot of the identity tags are optional (you can even invent your own!), but for this example let's just put in the required ones:

```
<identity>
    <sys_class>npc_melee</sys_class>
    <race>human</race>
    <class>warrior</class>
</identity>
```

Put this (and everything else that comes afterwards) inside the npc tag.

The character's base stats are pulled from level_chart.xml, and sys_class links directly to one of the defined chart entries with the same class name. Race and class are there for display purpose only:
It'll show up under a character's tooltip when a player mouseover the character.

Okay, now let's setup the state/action table:

```xml
<stateActionTable>
  <state name="normal" faction="shadow_council" color="FFFF00">
    <action name="stand" type="idle" anim="idle" />
    <action name="wander" type="move" anim="move" speedx="15" />
  </state>
</stateActionTable>
```

Here we've started with just a normal (and that's the default) state. Each state can set the character to a potentially different faction. The faction name comes into play when the NPC engages in targeting activities (more on that later) and offensive actions. Specifically, characters that are stuck in a state that shares identical faction names are in fact friendly to each other and therefore their attacks would not connect (meaning if there's two Shadow Guys next to each other, their attacks would not harm each other and instead would go through their body to try and hit the next valid target). All player characters automatically gets assigned to the "player" faction, so that is the faction to assign to should you choose to create an ally for the player.

Within this state we have two actions: stand and wander (the names are arbitrary). There is a predefined group of action types that affects animations, character movement, and combat actions. We'll just go over the easy ones for now: idle type is an action where the animation loops for a predefined duration (that'll be set later, inside behavior patterns). The value of the anim parameters corresponds to the labels of the same name inside the animation movieclip. The basic animations that gets packaged are pretty self explanatory and we'll be using those for now.

The wander action comes with an extra parameter: speex. speedx (and should you choose to do so, speedy) determines the direction of movement a character would go relative to his/her current target. A positive number (as it is the case currently) means the NPC would move toward the target, while a negative number would move the NPC away from the target. We'll go over targeting in further detail in the behavior programming section.

This is fine and all for an NPC that simply stands and walks around, but what happen if he gets hurt in this state, or heaven forbid, die? We'll need to make some additions to round out all the possibilities:

```xml
<stateActionTable>
  <state name="normal" faction="shadow_council" color="FFFF00">
    <action name="stand" type="idle" anim="idle" />
    <action name="wander" type="move" anim="move" speedx="15" />
    <action name="wound" type="wound" anim="wound" />
    <action name="death" type="death" anim="death" />
    <action name="stun" type="control" anim="idle" />
    <action name="fear" type="control" anim="move" speedx="20" />
    <action name="incapacitate" type="control" anim="idle" />
    <action name="banish" type="control" anim="Idle" />
  </state>
</stateActionTable>
```

And "all the possibilities" turns out to be a nice and even 6. 2 for wound actions (wound and death), and 4 for control (as in, crowd controlled) actions. The name and type of these actions are pre-
defined, but the animation is not - as you can see, it is possible to recycle animations for different
required actions. One final note to be added here is that the fear control action has a movement rate
(and that's how fast the character sprints around aimlessly when he/she is being feared).

Now that we got the basics all set up and a table of actions ready to go, the final step to get a
functional NPC working is to tell the NPC what to do, and that's what the behavior table is all about. So here it is:

```xml
<patternList>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <queueAction name="stand" duration="1.0" />
    <queueAction name="wander" duration="1.0" />
  </pattern>
</patternList>
```

All of the action that an NPC performs are stored in an internal list called the action queue. When an
NPC is out of actions to do (i.e. the action queue is empty), the NPC would look for a behavior
pattern to replenish the action queue. The checks are performed in the order that they're listed, and
only one pattern is chosen per check (but you do want to provide at least one pattern for any given
situation!).

To determine if a behavior is chosen, the NPC looks at the entire list of conditions in the pattern.
Every single one of those conditions must be satisfied in order for the NPC to choose that behavior
pattern.

In our case, our one and only pattern has only one condition: that the character state must currently
be at "normal". Since "normal" is the default character state and we have no actions that changes the
character state, this condition will always be true, and the actions listed under this condition will
always be chosen.

As a side note, the NPC currently has no chosen target. When an NPC has no target, any target
oriented action (this includes move) would randomly choose a direction instead of moving the
character directly toward (or away) from the target. Because at this point we decline to give the NPC
a target, the NPC would randomly move back and forth when the wander action is performed -
hence, wandering.

Okay, now we have enough to put a fully functional NPC together. let's assemble our scripts so far:

```xml
<npc dispName="Shadow Guy" name="shadow_guy" id="generic_male"
  portrait="gm_portrait" profile="gm_profile"
  isElite="false" level="2" levelVar="0"
  hue="0" saturation="0" brightness="0" contrast="0" alpha="100"
  gravityBound="true">
  <identity>
    <sys_class>npc_melee</sys_class>
    <race>human</race>
    <class>warrior</class>
  </identity>
  <stateActionTable>
    <state name="normal" faction="shadow_council" color="FFFF00">
```

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Copy and paste this to the end of npc_list.xml (but before the </npcList> tag, of course!), and let's fire up wowloader.html. Open up the debug console (if you haven't gone through the item tutorial yet, the hotkey is ctrl+shift+~), and enter the command "spawn npc shadow_guy".

And celebrate! Or something.

Oh, are you bored already? It's kinda cool that he kind of runs around and all, but he's also kind of boring because he never hits back! Let try to spice up our character a little. We do want him to aggro when the player hits him, remember?

Let's go back to the character's XML. We'll need the character to get mad at some point, and remember, each of these mental "state of mind" of the character should be separated out literally inside the script. So let's expand our state/action table a bit:
Notice that each state must contain a copy of the required wound and control actions (they can be missing, but the character would... shall we say... "misbehave"). The wander action is renamed to approach in the aggro state. Although the action shares the same properties, our behavior pattern setup will make these two functions work differently.

Obviously, we'll need to script in some new patterns in order for the character to perform all the new actions. Let's put in our character's attack pattern, which is to chase down the player and attack him/her:

```xml
<pattern>
  <condition type="state_equals_to" value="aggro" />
  <targetAction faction="player" />
  <queueAction name="approach" duration="1.0" />
  <queueAction name="attack" />
</pattern>
```

The targetAction added to this pattern is what makes the wander action different from the approach action. Once a target is chosen (in this case, the closest character that belongs to the faction "player" in the current state, which is most likely going to be the player's character), the sign of the speedx of the move action type is given meaning - if it's a positive number, then the character would move toward the target, and if the sign is negative, the character would move away from the target instead.

So you might imagine a behavior table that now looks like this:

```xml
<patternList>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <queueAction name="stand" duration="1.0" />
    <queueAction name="wander" duration="1.0" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <targetAction faction="player" />
    <queueAction name="approach" duration="1.0" />
    <queueAction name="attack" />
  </pattern>
</patternList>
```

First of all, our attack animation does not have a specified duration. The attack animation type works differently than the other animation types in that the animation only runs once (regardless of length) and moves on to the next action in the queue once the animation runs out.

You can put it into the npc xml script and run it, and you can whack on the Shadow Guy all you want, and nothing happens. Why you ask? Remember, the behavior script checks for behaviors from the top down. Since we don't have anything that switches our Shadow Guy to the "aggro" state, he's going to stay perpetually "normal", and the first pattern's condition will always be true. Even if we put the attack pattern before the normal one, the end result would be the same - the character is never going to go to his destined "aggro" state, so the behavior table will always ignore the first entry!

Well, let's put in a pattern that changes character state, then!
The new script simply says our character would change to the aggro state when his health is lower than 99.9% (Any melee attack should get our character's health below 99.9%...). If you put this script in and try out the character, you'd notice that he's still trying to be a nice guy all the time. How annoying... so what did we do wrong here?

Well, let's mentally try to think like our good o' Shadow Guy here. Okay, I'm hurt now, so let's check what I should do next. Let's check pattern 1 since it's at the top of the list. Am I in my "normal" state? Well, nothing told me to switch state so... yeah. Let's go back to doing my normal standing and wandering!

Hopefully you've realized the importance of pattern orders by now, so we'll do away with the shenanigans and offer you the patterns in the correct order:

```xml
<patternList>
  <pattern>
    <condition type="health_less_than" value="99.9%"/>
    <setState name="aggro"/>
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="normal"/>
    <queueAction name="stand" duration="1.0"/>
    <queueAction name="wander" duration="1.0"/>
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro"/>
    <targetAction faction="player"/>
    <queueAction name="approach" duration="1.0"/>
    <queueAction name="attack"/>
  </pattern>
</patternList>
```

Okay, we lied. This is still not going to work. Everything would seem fine until you hit Shadow Guy, in which case he goes to a random spasm of actions and yell "Help! I'm misbehaving". What happened there? Let's think like Shadow Guy once again. Okay, I'm hurt now, so let's check the pattern table... pattern 1 says that if my health is less that 99.9%, I'll switch to the "aggro" state. Done. Well, I'm out of stuff to do, so I'll need to look through the entire behavior table again, starting from the top... hey! Guess what? My health is still under 99.9%! Let's set my state to "aggro" again!...
Ahh, the fun of infinite loops. Suffice to say, we've programmed in an internal limit on how long you'd like to fry your character's brain before we stop the scripts from running any further (25 times to be exact)... also, if you check your debug console when the script breaks, you'd notice that there's an error message shown for shadow_guy. An infinite loop is the usual suspect for this particular error message, so remember it well.

Alright, so how do we fix this vicious cycle? The easiest thing to do is to add an extra condition for the state switch, which explicitly states the character would only switches state when he is currently in the "normal" state:

```xml
<pattern>
  <condition type="state_equals_to" value="normal" />
  <condition type="health_less_than" value="99.9%" />
  <setState name="aggro" />
</pattern>
```

If you put this change into the script, it'll finally work as intended - the npc would aggro and attack you when you hit the npc. For all intents and purposes, this is a fully functional NPC that behaves 100% as expected. There are quite a bit of work that we can do to round off this NPC's behavior, though. Take a break, have some fun, but come back to read the next part of this tutorial if you want to learn more about how to script some really cool characters!

Here is the full npc script in case you're lazy and just want to copy and paste:

```xml
<npc dispName="Shadow Guy" name="shadow_guy" id="generic_male"
  portrait="gm_portrait" profile="gm_profile"
  isElite="false" level="2" levelVar="0"
  hue="0" saturation="0" brightness="0" contrast="0" alpha="100"
  gravityBound="true">

<identity>
  <sys_class>npc_melee</sys_class>
  <race>human</race>
  <class>warrior</class>
</identity>

<stateActionTable>
  <state name="normal" faction="shadow_council" color="FFFF00">
    <action name="stand" type="idle" anim="idle" />
    <action name="wander" type="move" anim="move" speedx="15" />
    <action name="wound" type="wound" anim="wound" />
    <action name="death" type="death" anim="death" />
    <action name="stun" type="control" anim="idle" />
    <action name="fear" type="control" anim="move" speedx="20" />
    <action name="incapacitate" type="control" anim="idle" />
    <action name="banish" type="control" anim="idle" />
  </state>
  <state name="aggro" faction="shadow_council" color="FF0000">
    <action name="stand" type="idle" anim="idle" />
    <action name="approach" type="move" anim="move" speedx="15" />
    <action name="attack" type="attack" anim="attack" />
    <action name="wound" type="wound" anim="wound" />
    <action name="death" type="death" anim="death" />
    <action name="stun" type="control" anim="idle" />
  </state>
</stateActionTable>
```

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<patternList>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <condition type="health_less_than" value="99.9%" />
    <setState name="aggro" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <queueAction name="stand" duration="1.0" />
    <queueAction name="wander" duration="1.0" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <targetAction faction="player" />
    <queueAction name="approach" duration="1.0" />
    <queueAction name="attack" />
  </pattern>
</patternList>
</npc>

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XML Scripting: Items

Modifying items is by far the easiest (and most rewarding) hack job you can do in the game, and so naturally this tutorial should be the first to look at.

Let's begin by designing a chestplate armor. Open up item_budget_editor.swf (you can open these files in a browser window if you don't have a flash player application) and follow these steps:

- At the top right corner, click on the (Select a Slot) combo box and choose "Chest", since we're creating a chest armor piece.
- Right below the slot combo box is the rarity combo box. Change the item quality to "Epic". Who doesn't like epic items?
- Below the slot combo box is an item level number dial. You can type in (or use the up/down arrows to change) the item level to 10.
- If you look to the lower left corner, you will see an estimated budget and cost for your item. We should try to adjust the item stats to match the item budget.
- Let's make this a melee dps chest. At the top left corner, look for the Strength stat and change the stat number to 5. You'll notice that our current stat budget have changed to 5 as well.
- Using the same process, add 5 Stamina points and 44 armor points. Your current budget should now be 15.5. Don't worry - nobody says the budgeting has to be exact.
We are now ready to export this item as xml scripts. Hit the Export XML button at the top right corner.

A page of XML script has been generated to fit your chosen options. Select all of the text, right click and choose Copy (The Copy All function apparently does not work properly with notepad, so I'll not use it for this example).

On a separate window, locate item_list.xml (which is located under /rsc/xml/ by default) and open it. If you don't have an xml editor, you will have to open it through notepad.

While the item list is normally sorted by item slots, we'll just be sloppy and at the item at the very end of the list (for now). go to the bottom of the file, and locate the space between the last </item> tag and the </itemList> tag.

Right click and paste the item script.

Change the text [INTERNAL NAME] to cool_chest, or any other name that you want (as long as we didn't use it already, so try to be unique!). Note that the internal name has to be a single word, so use underscore instead of spaces to separate words.

Change the text [DISPLAY NAME] to Cool Chest, or any other name that you want (but it should be one that matches the internal name so it's easy to remember). This is the name that actually appears on the item info window.

Change the text [DROP IMAGE PATH] to rsc/img/items/equip/misc/bag_item.gif, which is the default graphics for all equipment drops in game.

Change the text [INVENTORY IMAGE PATH] to rsc/img/items/equip/chest/chest_006_inv.gif, or...
a relative path to other (even your own!) 37x37 inventory image icon.

- Let's remove the item requirements entirely for this epic chest. select the entire section between the `<requirement>` and `</requirement>` tag and delete it (just the ones for the new item!).

```xml
<Item>
  <name>cool_chest</name>
  <dispName>Cool chest</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_006_inv.gif</invImage>
  <type>chest</type>
  <rarity>epic</rarity>
  <cost>6200</cost>
  <damage>5</damage>
  <health>5</health>
  <armor>44</armor>
</Item>
```

Your item script should now look like this.

- And you're done! The item is officially in the game. However, without adding the item as a drop/vendor item/quest reward, the player will never get their grubby hands on your item, that is unless... you cheat!
- Save your item_list.xml file, and close all unneeded window. Fire up your local copy of wtfloader.html.
- Hold down Ctrl (sorry Mac users!) and Shift, and hit the tilde (~) key. You should now be in the debug console (remember this!).
- Type "give item cool_chest" into the console and hit enter. Check your backpack - the item should appear. Congrats! You're now the proud creator of One, Cool, Chest (or whatever you named it)!
Now let's get more advanced and create a spell trinket. Trinkets, in the current incarnation of the game, represent reusable spells and spell-like effects for players and NPCs alike. In this example, we'll create a fireball spell that also explores some of the projectile creation aspects of the game. Fire up your item_budget_editor.swf and here we go again:

- All item creations should start with the slot/rarity/level selection, just like the first example. In this case, select "Trinket" for item slot, "Rare" for rarity, and "10" for level. Refer to the first example if you need instructions on how to set these parameters up.
- You'll notice that the base stat window is available at the upper left corner of the window, and indeed you can add stat points to the trinket if you so desire... but since trinkets are being swapped around each time a player/npc activate a different ability, it'd probably be a bad idea to add base stats to this item.
- Instead, we'll work on the middle column, starting with the Cast Time number dial. Let's make this spell moderately long to cast and set the cast time to 0.8 (seconds). If you look at the lower right corner, you'll notice that the cast time of the trinket affects the effect multiplier. Faster spells tend to cost more budget points per effect since you can cast more of them over time.
- We'll not make this spell stealth only or interruptable, so we'll skip those options for now.
- Below the stealth/interruptable check boxes is the effect list. The list is currently empty right now so we'll have to add effects onto the list.
- Under the Effect List label is a combo box with all the possible effects that can be added to the
list. Since this is a fireball spell, we'll be dealing with a projectile, and it should be the default selected option.

- With "Projectile" selected, click the Create Effect button. A new projectile row is now added to the effect list.
- Using the new number dials created with the new effect, adjust the damage of the projectile to 40 + rnd 60 (which means the projectile has a damage range of 40-100).
- Let's add a DoT effect to our fireball spell. An undocumented (but true!) aspect of the effect list is that any effect added after the projectile effect will latch on as an on hit proc for the projectile instead of an on activate effect from the trinket. That being said, select "Damage Over Time" from the effect list and click Create Effect.
- You'll notice that an On Hit Proc Probability number dial had been added beneath the stealth/interrupt check boxes. Currently the proc rate of the damage over time (and other subsequent on hit effect) is only 1%! Let's correct that and make it 100%.
- Now, use the number dials on the new damage over time effect and set the damage range to 60 over 6 seconds (for an extra 10 dps).
- If you take a look at the current item budget (at the lower left corner), you'll notice that we have only used 35.77 out of our 40 points of estimated budget. We can leave the spell be, but if you look at the mana cost (49.19, to the lower right corner), 50 mana for a spell like this might be a bit too much! Let's reduce it by a bit. Using the number dial next to the mana cost, lower the mana budget to 90% (thus raising the current budget to 39.34).
Well, that's supposed to be the easy part. Now comes the hard part of porting the template over and filling out the details! First of all, open up item_list.xml AND projectile_list.xml (use notepad if you don't have another text editing program).

From item_budget_editor.swf, copy over the first half of the xml (up to the comment that says PROJECTILE INFO STARTS HERE ) to item_list.xml, just like how it was done in the first example.

Select an internal name, display name, drop icon, and inventory icon for the item. Look at step 12-15 of the previous example for a refresher course, and I recommend the following names: cool_fireball for [INTERNAL NAME], Cool Fireball for [DISPLAY NAME], rsc/img/items/equip/misc/bag_item.gif for [DROP IMAGE PATH], and rsc/img/items/equip/trinket/base_talents/pyroblast_inv.gif for [INVENTORY IMAGE PATH].

Let's remove the item requirement for this item as well. Delete the text between the <requirement> and </requirement> tags.

There's two more bracketed items that still needs substitution: [PROJECTILE NAME] and [DESCRIPTION]. For [PROJECTILE NAME], replace the text with cool_fireball (or a name of your choice). Projectile ids are not mutually exclusive with item ids, and it's usually wise to have these things share identical names for easy recognition.

Replace [DESCRIPTION] with the first half of the description of the spell. The engine automatically generates the rest of the text in the format of "for [X] to [Y] damage to [TARGET]" (where the bracketed areas are replaced by the appropriate text). So a sensible description, for example, would be "Casts a massive fireball".

```xml
<item>
  <name>cool_fireball</name>
  <dispName>Cool Fireball</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/pyroblast_inv.gif</invImage>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>15738</cost>
  <activate castTime="800">
    <effect type="projectile" name="cool_fireball" description="Casts a massive fireball" />
    <effect type="deplete" name="mana" value="44" />
  </activate>
</item>
```

Your item script should now look something like this.

Now we'll move on to the projectile portion of the spell. Note that the item_budget_editor only generates the damage snippet of the projectile and not the entire script, so we'll need to do a bit of creative borrowing here. Switch to projectile_list.xml and use the find function on your text editor to find the words "<name>pyroblast_1</name>". Copy everything, from the <projectile> tag above the search result to the next </projectile> tag (before the <projectile> tag that starts pyroblast_2). Now move to the end of the file and paste the entire text between the last </projectile> line and the </projectileList> line.

Delete the text for the <damage>, <damageVar>, <spellDamage>, and <proc> tags.

Change the text for the <name> tag of the projectile to cool_fireball (or the same name that you typed into the [PROJECTILE NAME] portion of the item script).

Going back to item_budget_editor.swf, and copy the projectile portion of the xml (from the
PROJECTILE INFO STARTS HERE (comment to the end of the XML text) in between the <projectile> and </projectile> tag of your newly created projectile in projectile_list.xml.

```xml
<projectile>
  <name>cool_fireball</name>
  <id>fireball</id>

  <lifetime>24</lifetime>
  <speedx>24</speedx>
  <speedy>0</speedy>
  <changespeedx>0</changespeedx>
  <changespeedy>0</changespeedy>

  <force>20</force>
  <angle>20</angle>

  <damage>40</damage>
  <damageVar>60</damageVar>
  <spellDamage>true</spellDamage>
  <proc probability="1">
    <effect type="dot" name="health" value="60" duration="6000" applyTo="target" />
  </proc>

  <hitEffect>fire_burst</hitEffect>
  <trailEffect frameDelay="1">fire_trail</trailEffect>
  <gravityBound>false</gravityBound>
</projectile>
```

Your projectile script should now look something like this.

- Finally, we're ready to test! Fire up your local copy of wtfloder, open up the debug console (ctrl +shift+~), and use the command "give item cool_fireball". Equip the trinket, cast it, and watch the thing launch! (Do note that this might not work on a level 1 Lumpen as he only has 40 mana at level 1)
Our "cool" fireball in action!

Note: This software is not officially sponsored by or directly associated with either the World of Warcraft developers at Blizzard Entertainment or their publisher and parent company Vivendi Universal.
ow that you understand the basic concepts behind behavior table scripting (and seen some of the common pitfalls firsthand), let's go over stuff that all the cool kids talk about: range management, full state cycles, and spell (trinket) casting.

First of all, let's pull out the script we finished with last time from the previous tutorial:

```xml
<npc dispName="Shadow Guy" name="shadow_guy" id="generic_male"
    portrait="gm_portrait" profile="gm_profile"
    isElite="false" level="2" levelVar="0"
    hue="0" saturation="0" brightness="0" contrast="0" alpha="100"
    gravityBound="true">
    <identity>
        <sys_class>npc_melee</sys_class>
        <race>human</race>
        <class>warrior</class>
    </identity>

    <stateActionTable>
        <state name="normal" faction="shadow_council" color="FFFF00">
            <action name="stand" type="idle" anim="idle" />
            <action name="wander" type="move" anim="move" speedx="15" />
            <action name="wound" type="wound" anim="wound" />
            <action name="death" type="death" anim="death" />
            <action name="stun" type="control" anim="Idle" />
            <action name="fear" type="control" anim="move" speedx="20" />
            <action name="incapacitate" type="control" anim="Idle" />
            <action name="banish" type="control" anim="idle" />
        </state>

        <state name="aggro" faction="shadow_council" color="FF0000">
            <action name="stand" type="idle" anim="idle" />
            <action name="approach" type="move" anim="move" speedx="15" />
            <action name="attack" type="attack" anim="attack" />
            <action name="wound" type="wound" anim="wound" />
            <action name="death" type="death" anim="death" />
            <action name="stun" type="control" anim="Idle" />
            <action name="fear" type="control" anim="move" speedx="20" />
            <action name="incapacitate" type="control" anim="Idle" />
            <action name="banish" type="control" anim="idle" />
        </state>
    </stateActionTable>
    <patternList>
        <pattern>
            <condition type="state_equals_to" value="normal" />
            <condition type="health_less_than" value="99.9%" />
        </pattern>
    </patternList>
</npc>
```
The first thing you'd realize is that his attack pattern is pretty dumb. He'll waste a second after every attack to chase you down - even if he is already within your meele range, and he'd try to hit thin air when he is nowhere near the player. Let's split up his approach and attack actions so he'd only do the proper action at the correct distance.

It's tempting to toss you into yet another common pitfall, but we'll be nice this time: Notice that we've moved the targetAction up to the state change pattern, right before we switch the state to aggro. This is because all range check conditions would automatically fail if there is no chosen target. Finally, the state switching action must be placed after the targeting action, since changing state wipes the action queue (because an action queued for one state might not appear in the action table for another state).

Range conditions can be used to check the distance away from the NPC's current target. Note that the range checks use different numbers since if the NPC is exactly 200 pixels away from the player, both checks would fail and you'd end up with a misbehaving character, however rare that is suppose
Now that we have a smarter Shadow Guy, chances are he's now able to kill the player during one of his rampages - and then promptly bugs himself out again. The misbehaving message might not show up this time, but the debug console won't lie - you've gotten yourself into another infinite loop. What happened there?

When Shadow Guy kills the player character, he automatically disengages - that is, his target resets to "none". As we mentioned before, all range check conditions (that doesn't specify a faction/character) automatically fail when the NPC has no current target. So let's review:

- The NPC is killing stuff so obviously in the "aggro" state, so the first two patterns doesn't check out, and then;
- The NPC has no current target, making the last two patterns fail also. There is nothing that the NPC can choose to do!

With this newfound knowledge, we can toss in some additional patterns to deal with the unforseen consequences. But wait:

```
<patternList>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <condition type="health_less_than" value="99.9%" />
    <targetAction faction="player" />
    <setState name="aggro" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <queueAction name="stand" duration="1.0" />
    <queueAction name="wander" duration="1.0" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <condition type="current_target" value="none" />
    <setState name="normal" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <condition type="range_less_than" value="201" />
    <queueAction name="attack" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <condition type="range_greater_than" value="200" />
    <queueAction name="approach" duration="1.0" />
  </pattern>
</patternList>
```

This is still crashing our character. How annoying! We're stuck in another infinite loop, albeit this is a slightly more complicated infinite loop. When the NPC can no longer target the player, the NPC resets the state back to "normal" and checks for new actions to populate the action queue. Well, the first pattern checks out if the NPC's health is less than 99.9% (which would certainly be true if you whacked the NPC once before), we're heading right back to aggro territory, and since there is no
more players for the NPC to target, the current target would remain as "none"... and here we go.

Curses! Infinite loop again!

To deal with this problem, we need to reset the NPC's health back to 100% when he finally kills the player. Since attacking the player won't give the NPC more health (unless you equipped the NPC with some special relic, but that's a topic for another time), we'll need the NPC to cast a healing spell. For a situation like this, we have just the thing: a trinket (spell) called Complete Heal. First of all, we'll need to set up a casting animation:

```xml
<action name="cast" type="cast" anim="cast" />
```

Put this inside the "aggro" state. Now, since all spellcasting is tied to trinket equipments, we'll need to equip Shadow Guy with the Complete Heal trinket in order for this little magic show to work. One way to make this happen is to modify the character's equipment table directly (we'll forego a full tutorial for this since it's pretty self explanatory if you look at the other NPCs in npc_list.xml). But you want to do something tricky - you want the character to be able to cast multiple spells. We'll need to change equipment on the fly. Well, we have just the thing for it, and here's the modified normal state reset pattern:

```xml
<pattern>
  <condition type="state_equals_to" value="aggro" />
  <condition type="current_target" value="none" />
  <equipAction type="trinket" name="complete_heal" />
  <queueAction name="cast" />
  <setState name="normal" />
</pattern>
```

Cast action types function just like attack action types - they don't loop. Any cast time for spells is directly related to the length of the cast animation itself, which is why there are cast and cast_inst animation variations on several NPC characters.

Now if you die after the Shadow Guy viciously attacked you, Shadow Guy would cast a spell to return to full health and start wandering around like nothing happened - just like we told him too. Just one more wrinkle to work out...

If you ever tried spawning Shadow Guy next to some other aggressive NPCs (say, a drunk Phallocrat), Shadow Guy would promptly run after you when it's some other sorry sod that whacked Shadow Guy! We programmed it as such - the NPC targets the player faction (which means the NPC would almost always target the player directly) when he's hit - so we're not really fixing behaviors so much as changing it. And with this final change, allow me to introduce the final incarnation of our Shadow Guy, in his fully scripted, non-broken glory:

```xml
<npc dispName="Shadow Guy" name="shadow_guy" id="generic_male"
  portrait="gm_portrait" profile="gm_profile"
  isElite="false" level="2" levelVar="0" hue="0"
  saturation="0" brightness="0" contrast="0" alpha="100"
  gravityBound="true">
  <identity>
    <sys_class>npc_melee</sys_class>
    <race>human</race>
    <class>warrior</class>
  </identity>
</npc>
```
<stateActionTable>
  <state name="normal" faction="shadow_council" color="FFFF00">
    <action name="stand" type="idle" anim="idle" />
    <action name="wander" type="move" anim="move" speedx="15" />
    <action name="death" type="death" anim="death" />
    <action name="wound" type="wound" anim="wound" />
    <action name="stun" type="control" anim="idle" />
    <action name="fear" type="control" anim="move" speedx="20" />
    <action name="incapacitate" type="control" anim="idle" />
    <action name="banish" type="control" anim="idle" />
  </state>
  <state name="aggro" faction="shadow_council" color="FF0000">
    <action name="stand" type="idle" anim="idle" />
    <action name="approach" type="move" anim="move" speedx="15" />
    <action name="attack" type="attack" anim="attack" />
    <action name="cast" type="cast" anim="cast" />
    <action name="wound" type="wound" anim="wound" />
    <action name="death" type="death" anim="death" />
    <action name="stun" type="control" anim="idle" />
    <action name="fear" type="control" anim="move" speedx="20" />
    <action name="incapacitate" type="control" anim="idle" />
    <action name="banish" type="control" anim="idle" />
  </state>
</stateActionTable>

<patternList>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <condition type="just_took_damage" value="true" />
    <targetAction faction="last_attacker" />
    <setState name="aggro" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="normal" />
    <queueAction name="stand" duration="1.0" />
    <queueAction name="wander" duration="1.0" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <condition type="current_target" value="none" />
    <equipAction type="trinket" name="complete_heal" />
    <queueAction name="cast" />
    <setState name="normal" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <condition type="range_less_than" value="201" />
    <queueAction name="attack" />
  </pattern>
  <pattern>
    <condition type="state_equals_to" value="aggro" />
    <condition type="range_greater_than" value="200" />
    <queueAction name="approach" duration="1.0" />
  </pattern>
</patternList>
</npc>
The key change we've done to the behavior table is the first pattern - we've replaced the health condition with "just_took_damage" and the target action's target with "last_attacker". This is how it works: when an NPC receives damage, the NPC would run through its wound animation, and the action queue resets. It'll then look through the pattern list for actions to queue, and at this time - and only this time - the "just_took_damage" condition would equal to "true" (you can have the condition check for not "just_took_damage", but that is so rare that it'll almost never be used). Also, the "last_attacker" faction is available for use after the NPC receives an attack on any sort (that actually does damage). As its name implies, it directs the NPC target toward whatever was last attacking the NPC. These two special conditions/parameters are usually combined to produce the aggro on hit behavior.

So there you go. This is where the meat of the NPC is all about - behavior programming. There's obviously other fluff you can add to make the NPC more alive (sound and effect comes to mind), and we'll leave those as an exercise for you code digging junkies to find out. Now go out there and make your own NPCs!

So long, and thanks for your time!

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his primer is an informal introduction of the basic concepts and terminologies of computer role playing games (CRPGs). If you're a veteran player of other CRPGs, feel free to skip this section and proceed to the walkthrough.

At its core, a CRPG is an interactive story where the player assumes the role of a character used to accomplish a series of challenging in-game objectives, often called quests. The completion of quests advances the storyline. A series of quests can be linked together into a quest chain. Quest chains help weave story elements together.

In WTF?! guests are obtained from quest givers. Quest givers are non-player characters (NPCs) with an exclamation mark or a question mark over their heads. When the player talks to the quest givers, their responses to the player character differs depending on the player's overall progress. Note that quest givers are not the only means to obtain a quest; some items inside the game may also have special attributes that initiate quests.
CRPG is often governed by a game system, a set of rules that determines the outcome of various player character and NPC actions. The player character is often defined by a set of numbers known as character attributes, a subset of which defines the current "player state."

For example, health points (HP) indicate the player character's general health condition. A high number signifies good health, and a low number signifies poor health, or injury. Zero health indicates death. Mana points (MP), are a common device used for game systems that incorporate the notion of magic and sorcery. Mana indicates the player character's reserve of an essence that allows execution of magical or other supernatural abilities. Depletion of mana points generally does not result in death, but it severely limits the player character's ability to use powerful abilities in the face of increasingly difficult challenges.

These two numbers are highly volatile and are often prominently displayed on the user interface, such as the player info window (shown below) used inside WTF?!

Character statistics or "stats" as they're commonly referred to, are a subset of character attributes that define a character's capabilities in various general categories. WTF?! utilizes the following character stats:

- **Stamina**: The character's resilience against pain and injury. It dictates the maximum amount of HP a character has.
- **Intelligence**: The character's general facility with the arcane. It dictates the maximum amount of MP a character has.
- **Spirit**: The character's spiritual mastery. It dictates the rate with which health and mana are restored over time.
- **Strength**: The character's physical prowess. It dictates melee damage.

During the course of a CRPG, the player character will receive additional stat points as an indication of character advancement. A character's progress is statistically tracked by the notion of experience points, which accumulate in relation to activity, and increase a character's level, and influence a character's overall combat capabilities when facing other characters.

In WTF?!, a small number underneath the character portrait (see picture above) displays the character's current level. Experience points are tracked by a bar at the bottom of the game screen. As player characters acquire experience points, they gradually advance toward the next level. A player character automatically "levels up" (increases in level by one), when enough experience points are acquired. The player character can accumulate experience points in two ways: by defeating other NPCs, and by completing quests.
During the course of a player's adventure, the player character will either find or be rewarded items both mundane and extraordinary. These items are automatically stored inside the player character's **inventory** signified by a backpack icon.

A subset of these items, called **equipment**, can be physically worn or wielded by a character. Items are often magical in nature. Equipping such items often dramatically improve a character's stats, or provide special abilities.

Each piece of equipment is assigned to an **equipment slot**. Each equipment slot can only contain one piece of equipment at a time. Players equip items one of two ways: double clicking on the item in their inventory, or opening their character window and dragging the item to the appropriate slot.
onsumables are items that activate special effects as they're being consumed, hence the name. Most consumables are restorative items - items that instantly (or gradually) restore depleted character attributes such as health points or mana points. These come in very handy!

A special type of consumables inside WTF?! are thrown weapons that damage opponents on contact. Knives and bombs are good examples of thrown weapons.
there are three general methods for the player to acquire items: by buying or selling, by looting fallen enemies, or by completing quests.

Buying and selling items involves interacting with a vendor, where in-game currency is exchanged for various goods through a trade interface. Items that are no longer useful can be sold back to a vendor in exchange for in-game currency, usually at a significantly reduced rate. Vendors often sell consumables that a player character can purchase in bulk, and keep ready for contingencies such as critical injuries received during the course of combat.

In a CRPG, the player will often run into combat encounters that require defeat of hostile enemies in order to advance and/or complete quest objectives. During a combat situation, the player’s goal is to reduce the health points of all hostile NPCs to zero while keeping their health points as high as possible.

The most direct method of reducing a hostile NPC’s health is to perform melee attacks. As indicated in the character statistics section, melee attack damage is determined by the player's level and equipment. The player character, as well as certain NPC characters, can take advantage of restorative consumables and abilities to increase their odds during conflict.
layers can perform powerful special abilities, such as casting magical spells, in exchange for mana points. In **WTF?!**, spells and abilities that are triggered on demand are associated with one type of equipment: **ability trinkets**. Once acquired, ability trinkets can be re-activated as long as the player has enough mana points to fuel the trinket's activation cost.

As a **side note**, there are a subset of quest related items in **WTF?!** that can be activated like an ability trinket. These quest items are reusable like ability trinkets, but do not cost mana to use. Such items are often used to accomplish specific quest objectives, and therefore rarely stay in the player's possession after quest completion.
character is declared dead when his or her health points are reduced to zero. In many CRPGs death is semi-permanent: when the
player character dies, the game session is over, and the player loses all progress up to that point and must continue from a
previously saved game state.

To reduce player frustration, WTF?! incorporates the concept of **respawning**, commonly used for competitive multiplayer video games
such as first person shooters. When the player character dies in WTF?!, an option is offered for the player to resurrect (respawn) at a
specific **spawn point**. Thus the player can continue questing without any major penalty or loss of significant progress.

That's it for the primer! When you are ready, continue on to the **game walkthrough** to learn about how to control your player character and
complete quests in **WTF?!**.

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tuck? Have no fear! Just follow this step-by-step walkthrough of the first few minutes of the game. Below is the login screen. From here you can select one of the two characters. The story changes quite a bit depending on which character you pick, so it'll be worth your time to play through both of them. Let's pick Phallicity for now. Click **Enter** to continue.

The game has several basic UI elements. In the upper left is a character info window that tracks health and mana. Characters that you can interact with have an icon on top of their head. Your first quest giver, Hegemon, is right next to you. The yellow "!" indicates he has a new quest available. Click **him** to talk to him and get the quest.
After reading through the quest text, you can click the Accept button at the lower left hand corner of the quest dialog window to add it to your Quest Log, which can be accessed from the interface bar at the bottom of the screen.
ince this is your first quest, the **Quest Log** will automatically pop up to show you how you can track your progress. At the same time, you have received a weapon to aid you in your questing. Click the icons on the interface bar to open the different windows. Move your cursor over the sword icon in your backpack and **double-click** the item to equip it.

![Quest Log](image)

hen you equip an item, your character portrait opens up to show you the changes in your character statistics. You can close the windows by clicking on the X button at the upper right corner of each of the windows.
ime to pork some piglets! Move your character by using the Arrow keys or the WASD keys. If you need some help with the controls, click the blue ? at the upper right corner of the game screen to learn the game’s basic controls.

Move to the left (or right) side of the camp and find a piglet. To learn more about the piglet, you can either click the piglet to target it, or simply roll over it with the cursor. Once targeted or rolled over, an info window pops up. You can also inspect your target by clicking on the small ? button around the character portrait of the target info window. Move your character close to it (but avoid getting too close to Hegemon!), and use either the Q key or , key to perform a melee attack. Rinse and repeat!
The game automatically tracks your progress as you complete quest objectives. You can also review quest objectives from the quest log by clicking its associated icon on the interface bar button, or by pressing the quest log shortcut key L.

After you slaughter 8 piglets (and after a likely lesson in humility from Hegemon if you weren't careful), Hegemon is ready for you to turn your quest in to him. The yellow question mark over his head indicates you've completed all quest objectives. Click Hegemon again to read his congratulatory message, and click **Complete** to get your reward.
urray, more items to equip! You'll notice that double-clicking to equip this particular item automatically sends it to the shortcut bar. This is because it's an ability trinket.

Ability trinkets are special items that activate various melee and spell abilities at the cost of some of your mana or health. They can be equipped on the fly as you need them. You activate an ability by pressing the icon on the shortcut bar, or better yet, by pressing the number key on the keyboard that corresponds to the icon on the shortcut bar. Acquire the next quest from Hegemon (click Hegemon, and click Accept to accept the quest). Go ahead and equip your new ability trinket as well.

During your adventure, you'd also run into other items that are categorized as "consumable" or "quest item". Consumables are one time use items - when you double-click the item, the item is consumed and the effects associated with the item gets triggered. There are also some quest items (but not all!) that can be activated by double-clicking the item. Both consumables and quest items can be bound to the shortcut bar for fast activation, but you'll have to manually drag the item to the shortcut bar to link up the item shortcut.
he quest objective indicates there's a group of Marx Converts to the Right, so we'll head that way. Well well. Who's this cute little one-eyed willy?

Why it's the Portal Master! Every zone has a portal master. They offer free teleportation services to areas you've already visited, as well as a respawn point should you meet an untimely demise. To activate a portal, talk to the Portal Master by clicking on it. Once activated, if you've visited more than one zone, you can travel back and forth between them by clicking on the listed destination. Since Effin' Forest is the only portal you've discovered, the Portal Master is not going to be very helpful for now. Let's keep moving right to finish your quest objective.
If you want to know how far you have to go to reach your destination (or just want to find fun points to explore), you can take a look at the Zone Map. The icon for the zone map is on the interface bar. You can also press M to toggle it on/off.

The icons on the map indicate points of interest in that zone - quest givers, vendors, portal masters, and landmarks. Your relative position and direction is also shown. You can move your mouse over most points of interest to see the name of the character that point represents. The map indicates that Mr. Marx is still further to the right. Let's keep going!
Finally, some Marx Converts! Now it's time to test your ability trinkets. Again, to activate an ability trinket, you can either click on its icon on the shortcut bar, or press the number key that corresponds to the number on the shortcut bar icon.

A casting progress bar shows the remaining duration before the spell is cast. The cast can be interrupted by running or jumping. Beware! Your enemies can also slow down or completely cancel out your spell by wounding you, so be sure to maintain some distance before casting! Now, let's try our Holy Smite ability. Aim yourself at a Marx Convert, and press Number 1.

Oy, he looks pretty pissy! You can tell when your target turns aggressive toward you by the red circle around the base shadow. You should end this quickly. Use your main-hand weapon, your spells, and whatever else you can think of!
WTF?! Tutorial: Walkthrough

rap! I forgot, your objective isn't to kill these Marx Converts, but to **polymorph** them back into sheep for Hegemon! To do this use your Sheeping Trinket, which instantly re-sheeps a convert if successfully cast. Don't forget to review your quest text if you're confused about what to do next!
WTF!! Tutorial: Walkthrough

h yeah! In order to buy or sell items you must first find a vendor. Luckily, there's one near the Marx Converts. Vendors are also displayed with a tiny bag icon on the map. Once you find her, a brown bag icon will appear above her head, indicating she's ready to do business. Click on the vendor to open the trade window.

To buy an item, either drag it from the trade window to your backpack, or double click it. To sell an item, either drag it from your backpack to the trade window, or simply double click it while the trade window is visible. If you double click when the trade window is closed, you'd equip or use the item, depending on the item type.

Once you're done with the sheep conversion, you can return to Hegemon to pick up your reward and continue your adventure. Oh! Let's make sure to save your progress so you don't lose your hard work.

The save and quit button is located in the lower left hand corner on the interface bar. You can either click that button or simply press the escape key (esc) to access the save and quit dialog. Click okay to save and return to the title screen. You'll notice that your character profile on the title screen is updated with your current level and location. The next time you load the game you will now continue exactly where you left off.
Note: This software is not officially sponsored by or directly associated with either the World of Warcraft developers at Blizzard Entertainment or their publisher and parent company Vivendi Universal.
lee Combat Strategies:

- There are two main methods for avoiding incoming melee damage: running away or dodging. Running away is easier, but it also moves you out of melee range, thus preventing your attacks as well. Therefore, it is important to master the dodge ability as quickly as possible.
- Observe your opponents for any discernable attack patterns. You need to develop a sense of timing, and learn your opponent's rhythm in order to dodge their attacks, while counter-attacking in between dodges.
- When facing difficult opponents, make use of all of your character's melee ability trinkets as quickly and as often as possible. These abilities can greatly enhance the player character's damage potential, greatly increasing your chracter's chance of surving the encounter.
- Always keep your health as close to maximum as possible. Melee characters tend to recieve more physical and environmental damage than casters, so it's always a good idea to watch your health meter whenever you're receiving significant damage, and to heal yourself (with spells or consumables) when your health is low.

http://www.aoedipus.net/strategy.html (1 of 4) 10/16/2008 8:31:49 AM
pell Combat Strategies:

- The spell casting play style allows the player to attack from afar. This is known as a "ranged" attack. The goal is to take down your opponent before your opponent reaches melee range and forces you to engage in melee combat.
- Distance is a spell caster's best friend, because all melee attacks can slow down or completely interrupt a spell casting attempt.
- If your opponent is about to reach you, and the spell you are casting is nowhere near complete, you can cancel the spell and retreat by simply moving away from your opponent. After increasing the distance between you and your opponent, you can start casting the spell again.
- When fighting other spell casters you can dodge or jump over their incoming spell projectiles to avoid taking damage.

eneral Combat Strategies:

- To gauge the difficulty of a combat encounter, check your current level relative to the level of your opponent. If the difference is less than 3 levels, then you can expect a more or less even fight. However, look out for characters with a dragon border around their portraits. These are elite characters, designed to be difficult to take down even when you are in the appropriate level range.
- Running away from a fight is always an option. This is especially useful if you are outnumbered. When you run far enough, your opponents will often disengage from combat and scatter off so that you can go back and try to pick them off or "pull" them one by one.
- When you engage a boss or elite character, avoid moving toward the edge or transition area of a zone. Zoning out resets all combat encounters. Conversely, when you accidentally incite the wrath of bosses or other important characters, you can move out of the zone to escape.
Item Management Strategies:

- Stock up on consumables such as bread, water, fruits and potions, and bind them to the shortcut bar by dragging the item onto the bar. Once the item is bound to the bar, you can use the shortcut (by either clicking it with your mouse, or by pressing the corresponding number) to activate the consumable item to recover your health or mana.
- Prepare your shortcut bar to include only those ability trinkets or consumables that you frequently use. You can remove a shortcut by dragging its icon out of the shortcut bar area.
- Beware that time based abilities by default do not stack with each other. For example, consuming multiple pieces of bread would still only recover 80 additional health over 12 seconds within the 12 second period. There are exceptions, however: the Poisoned Stab ability, for example, states that it can stack up to 3 times, allowing for up to 3 applications of the poison to run simultaneously over the 15 second period.
- When considering which item to keep for an equipment slot when two or more items are available, remember that the strength stat improves melee ability, and intelligence improves spell casting ability. Stamina and spirit are generally useful to all character types.
- Rare equipment - uncommon (green), rare (blue), or epic (purple) items - are superior to their common counterparts. Equipment that requires higher character levels to equip are also generally better than those that require a lower character levels to equip.
Note: This software is not officially sponsored by or directly associated with either the World of Warcraft developers at Blizzard Entertainment or their publisher and parent company Vivendi Universal.
font-size: 14pt;
font-weight: bold;
font-style: normal;
}
This XML file does not appear to have any style information associated with it. The document tree is shown below.

```xml
<-- SPECIAL EVENT EFFECTS -->
  <effect>
    <name>level</name>
    <staticObject position="bottom">level_up_base</staticObject>
    <base>holy_spark</base>
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  </effect>

  <!-- CONSUMABLE EFFECTS -->
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    <name>sparks</name>
    <base>star</base>
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    <duration>1200</duration>
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    <sound>repeatOnRespawn=true</sound> events/drop.mp3</sound>
  </effect>

  <!-- HEAL EFFECTS -->
  <effect>
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    <base>holy_spark</base>
    <spawn minX="-75" maxX="75" minY="-75" maxY="75" minAmount="8" maxAmount="10" />
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    <rotate startMin="0" startMax="360" changeMin="12" changeMax="12" />
    <duration>300</duration>
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  </effect>

  <effect>
    <name>mana_up</name>
    <base>arcane_spark</base>
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    <speed spawnPattern="rising" movePattern="rising" startMin="3" startMax="12" changeMin="-0.5" changeMax="-0.5" capMin="0" />
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    <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10" />
    <rotate startMin="0" startMax="360" changeMin="12" changeMax="12" />
    <duration>600</duration>
    <sound>real_wow/holy_cast.mp3</sound>
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  <effect>
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    <rotate startMin="0" startMax="0" changeMin="0" changeMax="0" />
    <duration>1000</duration>
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  </effect>

  <effect>
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    <base>heal</base>
  </effect>
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</effect>

<!-- 8 Bit Effects -->

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  <name>mario_fire_trail</name>
  <base>mario_fireball_pixel</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="3" maxAmount="6" />
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  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0" />
  <duration>500</duration>
</effect>

<effect>
  <name>mario_fire_burst</name>
  <base>mario_fireball_pixel</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="20" maxAmount="30" />
  <speed spawnPattern="starburst" movePattern="starburst" startMin="8" startMax="16" changeMin="-0.5" changeMax="-0.5" capMin="0" />
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  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10" />
  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0" />
  <duration>1200</duration>
  <sound>mario/fireball.mp3</sound>
</effect>

<effect>
  <name>mario_flower_power</name>
  <base>mario_power_pixel</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="8" maxAmount="8" />
  <respawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="8" maxAmount="8" delay="300" />
  <speed spawnPattern="starburst" movePattern="wave" startMin="4" startMax="6" changeMin="8" changeMax="14" />
  <size startMin="120" startMax="160" changeMin="0" changeMax="50" />
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10" />
  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0" />
  <duration>600</duration>
  <sound>mario/flower_power.mp3</sound>
</effect>

<effect>
  <name>mario_one_up_power</name>
  <base>mario_power_pixel</base>
  <spawn minX="-60" maxX="60" minY="-60" maxY="60" minAmount="12" maxAmount="12" />
  <speed spawnPattern="rising" movePattern="falling" startMin="6" startMax="6" changeMin="0.1" changeMax="0.1" />
  <size startMin="200" startMax="300" changeMin="0" changeMax="0" />
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10" />
  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0" />
  <duration>600</duration>
  <sound>mario/one_up.mp3</sound>
</effect>

<effect>
  <name>mario_mushroom_power</name>
  <base>mario_power_pixel</base>
  <spawn minX="-50" maxX="50" minY="-50" maxY="50" minAmount="12" maxAmount="16" />
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<duration>infinite</duration>
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</effect>

-- effect

<name>mario_star_power</name>
<base>mario_power_pixel</base>
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</effect>

<!-- PHYSICAL EFFECTS -->

-- effect

<name>splatter</name>
<base>blood</base>
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<speed spawnPattern="starburst" movePattern="starburst" startMin="6" startMax="14" changeMin="1" changeMax="1"/>
<size startMin="85" startMax="125" changeMin="-5" changeMax="-10"/>
<alpha startMin="60" startMax="80" changeMin="-5" changeMax="-10"/>
<rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<sound>events/wound_33.mp3</sound>
<duration>600</duration>
</effect>

-- effect

<name>blunt</name>
<base>blade_spark</base>
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<size startMin="75" startMax="125" changeMin="0" changeMax="0"/>
<alpha startMin="100" startMax="100" changeMin="-10" changeMax="-10"/>
<rotate spawnPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<sound>events/wound_33.mp3</sound>
<duration>1200</duration>
</effect>

-- effect

<name>sword</name>
<base>blood</base>
<spawn minX="-10" maxX="10" minY="-10" maxY="10" minAmount="12" maxAmount="18"/>
<speed spawnPattern="starburst" movePattern="falling" startMin="6" startMax="14" changeMin="1" changeMax="1"/>
<size startMin="85" startMax="125" changeMin="-5" changeMax="-10"/>
<alpha startMin="60" startMax="80" changeMin="-5" changeMax="-10"/>
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<sound>real_wow/sword_hit_flesh.mp3</sound>
<duration>600</duration>
</effect>

-- effect

<name>dagger</name>
<base>blood</base>
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<speed spawnPattern="starburst" movePattern="falling" startMin="6" startMax="14" changeMin="1" changeMax="1"/>
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<alpha startMin="60" startMax="80" changeMin="-5" changeMax="-10"/>
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<sound>real_wow/dagger_hit_flesh.mp3</sound>
<duration>600</duration>
</effect>

-- effect

<name>axe</name>
<base>blood</base>
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<size startMin="85" startMax="125" changeMin="-5" changeMax="-10"/>
<alpha startMin="60" startMax="80" changeMin="-5" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
<sound>real_wow/axe_hit_flesh.mp3</sound>
</effect>

<effect>
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  <base>blade_spark</base>
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  <speed spawnPattern="starburst" movePattern="starburst" startMin="3" startMax="6" changeMin="-0.3" changeMax="-0.3"/>
  <size startMin="75" startMax="125" changeMin="0" changeMax="0"/>
  <alpha startMin="100" startMax="100" changeMin="-10" changeMax="10"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <sound>real_wow/unarmed_attack.mp3</sound>
  <duration>1200</duration>
</effect>

<effect>
  <name>slam</name>
  <base>blade_spark</base>
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  <size startMin="75" startMax="125" changeMin="0" changeMax="0"/>
  <alpha startMin="100" startMax="100" changeMin="-10" changeMax="10"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <sound>real_wow/knock_down.mp3</sound>
  <duration>1200</duration>
</effect>

<effect>
  <name>staff</name>
  <base>blade_spark</base>
  <spawn minX="-10" maxX="10" minY="-10" maxY="10" minAmount="8" maxAmount="10"/>
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  <size startMin="75" startMax="125" changeMin="0" changeMax="0"/>
  <alpha startMin="100" startMax="100" changeMin="-10" changeMax="10"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <sound>real_wow/mace_hit_flesh.mp3</sound>
  <duration>1200</duration>
</effect>

<effect>
  <name>mace</name>
  <base>blade_spark</base>
  <spawn minX="-10" maxX="10" minY="-10" maxY="10" minAmount="8" maxAmount="10"/>
  <speed spawnPattern="starburst" movePattern="starburst" startMin="3" startMax="6" changeMin="-0.3" changeMax="-0.3"/>
  <size startMin="75" startMax="125" changeMin="0" changeMax="0"/>
  <alpha startMin="100" startMax="100" changeMin="-10" changeMax="10"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <sound>real_wow/mace_hit_flesh.mp3</sound>
  <duration>1200</duration>
</effect>

<effect>
  <name>bleed</name>
  <base>blood</base>
  <spawn minX="-30" maxX="30" minY="-60" maxY="0" minAmount="1" maxAmount="3"/>
  <respawn minAmount="1" maxAmount="3" delay="300"/>
  <speed spawnPattern="falling" movePattern="falling" startMin="3" startMax="8" changeMin="1" changeMax="1"/>
  <size startMin="45" startMax="75" changeMin="0" changeMax="0"/>
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="5"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
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  <duration>infinite</duration>
  <sound>real_wow/rend_target.mp3</sound>
</effect>

<effect>
  <name>blood_cloud</name>
  <base>blood</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="12" maxAmount="15"/>
  <speed spawnPattern="rising" movePattern="falling" startMin="6" startMax="16" changeMin="1" changeMax="1"/>
  <size startMin="30" startMax="60" changeMin="10" changeMax="20"/>
  <alpha startMin="100" startMax="100" changeMin="-6" changeMax="-12"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <duration>600</duration>
  <sound>real_wow/rend_target.mp3</sound>
</effect>
- <effect>
  <name>blood_fountain</name>
  <base>blood</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="0" minAmount="12" maxAmount="15"/>
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  <size startMin="30" startMax="60" changeMin="10" changeMax="20"/>
  <alpha startMin="100" startMax="100" changeMin="-6" changeMax="-12"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <duration>600</duration>
  <sound>real_wow/rend_target.mp3</sound>
</effect>

- <effect>
  <name>poison</name>
  <base>poison_splash</base>
  <spawn minX="-15" maxX="15" minY="-60" maxY="0" minAmount="1" maxAmount="1"/>
  <respawn minAmount="1" maxAmount="1" delay="400"/>
  <speed spawnPattern="starburst" movePattern="implode" startMin="1" startMax="6" changeMin="0.3" changeMax="0.6"/>
  <size startMin="120" startMax="240" changeMin="5" changeMax="10"/>
  <alpha startMin="60" startMax="80" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="-15" changeMax="15"/>
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  <lifetime>400</lifetime>
  <duration>infinite</duration>
</effect>

- <effect>
  <name>poison_splash</name>
  <base>poison_splash</base>
  <spawn minX="-15" maxX="15" minY="-15" maxY="15" minAmount="10" maxAmount="20"/>
  <speed spawnPattern="starburst" movePattern="implode" startMin="98" startMax="12" changeMin="0.3" changeMax="0.6"/>
  <size startMin="120" startMax="240" changeMin="5" changeMax="10"/>
  <alpha startMin="80" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="-15" changeMax="15"/>
  <duration>600</duration>
  <sound>real_wow/deadly_poison.mp3</sound>
</effect>

- <effect>
  <name>smoke_splash</name>
  <base>smoke</base>
  <spawn minX="40" maxX="40" minY="-40" maxY="40" minAmount="15" maxAmount="20"/>
  <speed spawnPattern="starburst" movePattern="implode" startMin="9" startMax="12" changeMin="0.3" changeMax="0.6"/>
  <size startMin="130" startMax="160" changeMin="-5" changeMax="-10"/>
  <alpha startMin="100" startMax="100" changeMin="-2" changeMax="-4"/>
  <rotate startMin="0" startMax="360" changeMin="-15" changeMax="15"/>
  <duration>600</duration>
  <sound>events/stomp_reverb.mp3</sound>
</effect>

- <effect>
  <name>smoke</name>
  <base>smoke</base>
  <spawn minX="-40" maxX="-40" minY="-40" maxY="40" minAmount="15" maxAmount="20"/>
  <speed spawnPattern="starburst" movePattern="implode" startMin="99" startMax="12" changeMin="0.3" changeMax="0.6"/>
  <size startMin="130" startMax="160" changeMin="-5" changeMax="-10"/>
  <alpha startMin="100" startMax="100" changeMin="-2" changeMax="-4"/>
  <rotate startMin="0" startMax="360" changeMin="-15" changeMax="15"/>
  <duration>600</duration>
  <sound>real_wow/gun_fire.mp3</sound>
</effect>

- <effect>
  <name>smoke_trail</name>
  <base>smoke</base>
  <spawn minX="-5" maxX="5" minY="-15" maxY="15" minAmount="1" maxAmount="1"/>
  <speed spawnPattern="rising" movePattern="falling" startMin="3" startMax="6" changeMin="0.1" changeMax="0.3"/>
  <size startMin="60" startMax="100" changeMin="-10" changeMax="-10"/>
  <alpha startMin="100" startMax="100" changeMin="-10" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <duration>500</duration>
</effect>

- <effect>
  <name>rocket</name>
  <base>flame</base>
  <spawn position="bottom" minX="-30" maxX="30" minY="-5" maxY="0" minAmount="20" maxAmount="30"/>
  <respawn position="bottom" minAmount="2" maxAmount="4" delay="100"/>
<speed spawnPattern="side" movePattern="side" startMin="4" startMax="8" changeMin="-1" changeMax="-0.5"/>
<size startMin="900" startMax="130" changeMin="-5" changeMax="-10"/>
<alpha startMin="100" startMax="100" changeMin="-3" changeMax="-5"/>
<rotate startMin="0" startMax="360" changeMin="-16" changeMax="16"/>
<duration>600</duration>
<sound>real_wow/bull_rush.mp3</sound>
</effect>

<effect>
  <name>stun</name>
  <staticObject position="top">stun_anim</staticObject>
  <base>blade_spark</base>
  <spawn minX="0" maxX="0" minY="0" maxY="0" minAmount="0" maxAmount="0"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <size startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <duration>1000</duration>
  <sound>real_wow/kidney_shot.mp3</sound>
</effect>

<effect>
  <name>incap</name>
  <staticObject position="top">incap_anim</staticObject>
  <base>blade_spark</base>
  <spawn minX="0" maxX="0" minY="0" maxY="0" minAmount="0" maxAmount="0"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <size startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <duration>1000</duration>
  <sound>real_wow/kidney_shot.mp3</sound>
</effect>

<effect>
  <name>ache</name>
  <base>blade_spark</base>
  <spawn minX="-10" maxX="10" minY="-10" maxY="10" minAmount="8" maxAmount="10"/>
  <speed spawnPattern="starburst" movePattern="starburst" startMin="3" startMax="6" changeMin="-0.3" changeMax="-0.3"/>
  <size startMin="75" startMax="125" changeMin="0" changeMax="0"/>
  <alpha startMin="100" startMax="100" changeMin="-10" changeMax="-10"/>
  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <duration>1200</duration>
</effect>

<effect>
  <name>last_stand</name>
  <base>physical_circle</base>
  <spawn minX="-60" maxX="60" minY="-40" maxY="80" minAmount="2" maxAmount="6"/>
  <respawn minAmount="1" maxAmount="2" delay="150"/>
  <speed spawnPattern="rising" movePattern="wave" startMin="2" startMax="6" changeMin="5" changeMax="18"/>
  <size startMin="30" startMax="70" changeMin="0" changeMax="0"/>
  <alpha startMin="40" startMax="70" changeMin="-1" changeMax="-2"/>
  <rotate startMin="90" startMax="90" changeMin="0" changeMax="0"/>
  <tint color="FFFFFF" amount="0.40"/>
  <duration>1500</duration>
</effect>

<effect>
  <name>real_wow/last_stand.mp3</name>
</effect>

<effect>
  <name>critical</name>
  <base>physical_circle</base>
  <spawn minX="-40" maxX="40" minY="-40" maxY="40" minAmount="12" maxAmount="12"/>
  <speed spawnPattern="starburst" movePattern="starburst" startMin="6" startMax="16" changeMin="-1" changeMax="-1"/>
  <size startMin="20" startMax="120" changeMin="-1" changeMax="-1"/>
  <alpha startMin="70" startMax="100" changeMin="-12" changeMax="-12"/>
  <rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <duration>400</duration>
</effect>

<effect>
  <name>real_wow/clearcasting.mp3</name>
</effect>

<effect>
  <name>enraged</name>
</effect>
<base>blood_circle</base>
<spawm minX="-60" maxX="60" minY="-40" maxY="80" minAmount="2" maxAmount="6"/>
<respawn minAmount="1" maxAmount="2" delay="150"/>
<speed spawmPattern="rising" movePattern="wave" startMin="2" startMax="6" changeMin="5" changeMax="18"/>
<size startMin="30" startMax="70" changeMin="0" changeMax="0"/>
<alpha startMin="40" startMax="70" changeMin="-1" changeMax="-2"/>
<rotate startMin="90" startMax="90" changeMin="0" changeMax="0"/>
<tint color="FF0000" amount="0.40"/>
<lifetime>1500</lifetime>
<duration>infinite</duration>
<sound>real_wow/last_stand.mp3</sound>
</effect>

<!-- rogue effects -->

<name>taunt</name>
<base>blood_circle</base>
<spawm position="top" minX="-40" maxX="40" minY="10" maxY="40" minAmount="8" maxAmount="8"/>
<speed spawmPattern="starburst" movePattern="starburst" startMin="6" startMax="16" changeMin="-1" changeMax="-1"/>
<size startMin="60" startMax="120" changeMin="-1" changeMax="-1"/>
<alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
<rotate spawmPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<duration>400</duration>
<sound>real_wow/last_stand.mp3</sound>
</effect>

<name>horn</name>
<base>blood_circle</base>
<spawm position="top" minX="-40" maxX="40" minY="10" maxY="40" minAmount="8" maxAmount="8"/>
<speed spawmPattern="starburst" movePattern="starburst" startMin="6" startMax="16" changeMin="-1" changeMax="-1"/>
<size startMin="60" startMax="120" changeMin="-1" changeMax="-1"/>
<alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
<rotate spawmPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<duration>400</duration>
<sound>real_wow/last_stand.mp3</sound>
</effect>

<name>drunk</name>
<base>drunk_bubble</base>
<spawm position="top" minX="-15" maxX="15" minY="-15" maxY="15" minAmount="2" maxAmount="4"/>
<respawn position="top" minAmount="1" maxAmount="3" delay="300"/>
<speed spawmPattern="rising" movePattern="wave" startMin="3" startMax="6" changeMin="18" changeMax="24"/>
<size startMin="40" startMax="60" changeMin="3" changeMax="6"/>
<alpha startMin="80" startMax="100" changeMin="-3" changeMax="-6"/>
<rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<tint color="FDDBE2D" amount="0.40"/>
<lifetime>800</lifetime>
<duration>infinite</duration>
<sound>real_wow/sleep_impact.mp3</sound>
</effect>

<name>seduced_hegemon</name>
<base>heart</base>
<spawm position="top" minX="-15" maxX="15" minY="-15" maxY="15" minAmount="2" maxAmount="4"/>
<respawn position="top" minAmount="1" maxAmount="3" delay="300"/>
<speed spawmPattern="rising" movePattern="wave" startMin="3" startMax="6" changeMin="24" changeMax="24"/>
<size startMin="40" startMax="60" changeMin="3" changeMax="6"/>
<alpha startMin="80" startMax="100" changeMin="-3" changeMax="-6"/>
<rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<tint color="FDDBE2D" amount="0.30"/>
<lifetime>800</lifetime>
<duration>6000</duration>
<sound>real_wow/seduction.mp3</sound>
</effect>

<name>stealth</name>
<base>shadow_splash</base>
<spawm minX="-15" maxX="15" minY="-40" maxY="40" minAmount="20" maxAmount="20"/>
<respawn minAmount="1" maxAmount="3" delay="400"/>
<speed spawmPattern="starburst" movePattern="implode" startMin="11" startMax="9" changeMin="0.3" changeMax="0.6"/>
<size startMin="120" startMax="240" changeMin="5" changeMax="10"/>
<alpha startMin="60" startMax="80" changeMin="-5" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="-15" changeMax="15"/>
<tint color="000000" amount="0.40"/>
<life>600</life>
<duration>infinite</duration>
<sound>real_wow/vanish.mp3</sound>
</effect>

<!-- NATURE EFFECTS -->

<effect>
  <name>slice_and_dice</name>
  <base>windy</base>
  <spawn minX="0" maxX="0" minY="0" maxY="0" minAmount="1" maxAmount="1"/>
  <respawn minAmount="1" maxAmount="1" delay="450"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <size startMin="80" startMax="120" changeMin="0" changeMax="0"/>
  <alpha startMin="20" startMax="40" changeMin="0" changeMax="0"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <life>600</life>
  <duration>infinite</duration>
  <sound>real_wow/cleave_target.mp3</sound>
</effect>

<!-- ARCANE EFFECTS -->

<effect>
  <name>arcane_aura</name>
  <base>arcane_spark</base>
  <spawn position="bottom" minX="-60" maxX="60" minY="0" maxY="0" minAmount="2" maxAmount="6"/>
  <respawn position="bottom" minAmount="0" maxAmount="2" delay="150"/>
  <speed spawnPattern="implode" movePattern="rising" startMin="4" startMax="8" changeMin="0.4" changeMax="0.4"/>
  <size startMin="40" startMax="80" changeMin="-1" changeMax="1"/>
  <alpha startMin="60" startMax="80" changeMin="-3" changeMax="3"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <tint color="FFFFFF" amount="0.40"/>
  <life>750</life>
  <duration>infinite</duration>
  <sound>real_wow/bull_rush.mp3</sound>
</effect>

<!-- NATURE EFFECTS -->

<effect>
  <name>nature_heal</name>
  <base>nature_spark</base>
  <spawn position="bottom" minX="-75" maxX="75" minY="-75" maxY="0" minAmount="8" maxAmount="12"/>
  <respawn position="bottom" minAmount="0" maxAmount="2" delay="500"/>
  <speed spawnPattern="rising" movePattern="implode" startMin="3" startMax="5" changeMin="0.6" changeMax="0.6" capMin="0"/>
  <size startMin="40" startMax="80" changeMin="-0.5" changeMax="0.2"/>
  <alpha startMin="60" startMax="60" changeMin="-2" changeMax="-5"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <life>1600</life>
  <duration>infinite</duration>
  <sound>real_wow/greater_heal.mp3</sound>
</effect>

<!-- HOLE EFFECTS -->

<effect>
  <name>nature_regrow</name>
  <base>nature_spark</base>
  <spawn minX="-50" maxX="50" minY="-50" maxY="50" minAmount="1" maxAmount="3"/>
  <respawn minAmount="1" maxAmount="3" delay="500"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="3" startMax="5" changeMin="0" changeMax="0" capMin="0"/>
  <size startMin="40" startMax="80" changeMin="-0.5" changeMax="-2"/>
  <alpha startMin="60" startMax="60" changeMin="-2" changeMax="-5"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <life>600</life>
  <duration>infinite</duration>
</effect>

<!-- HOLY EFFECTS -->

<effect>
  <name>holy_heal</name>
  <base>holy_spark</base>
  <spawn minX="-75" maxX="75" minY="-75" maxY="75" minAmount="10" maxAmount="18"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="3" startMax="12" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
  <size startMin="30" startMax="60" changeMin="-0.5" changeMax="-2"/>
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <life>1200</life>
  <duration>1200</duration>
  <sound>real_wow/greater_heal.mp3</sound>
</effect>

<!-- HOLY EFFECTS -->

<effect>
  <name>holy_buff</name>
  <base>holy_spark</base>
</effect>
<spawn minX="-30" maxx="30" minY="-30" maxY="30" minAmount="3" maxAmount="6"/>
<speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0.1" changeMax="0.3"/>
<size startMin="50" startMax="125" changeMin="-10" changeMax="-10"/>
,alpha startMin="100" startMax="100" changeMin="-10" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
<duration>500</duration>
</effect>

-- effect

<name>fuse_trail</name>
<base>flame</base>
<spawn minX="-5" maxx="5" minY="-5" maxY="-5" minAmount="1" maxAmount="1"/>
<speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0.1" changeMax="0.3"/>
<size startMin="50" startMax="100" changeMin="-10" changeMax="-10"/>
,alpha startMin="100" startMax="100" changeMin="-10" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
<duration>500</duration>
</effect>

-- effect

<name>bomb_burst</name>
<base>flame</base>
<spawn minX="-30" maxx="30" minY="-30" maxY="30" minAmount="15" maxAmount="25"/>
<speed spawnPattern="starburst" movePattern="starburst" startMin="8" startMax="16" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
<size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>
,alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
<duration>1200</duration>
<sound>real_wow/dynamite.mp3</sound>
</effect>

-- effect

<name>fire_burst</name>
<base>flame</base>
<spawn minX="-30" maxx="30" minY="-30" maxY="30" minAmount="15" maxAmount="25"/>
<speed spawnPattern="starburst" movePattern="starburst" startMin="8" startMax="16" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
<size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>
,alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
<duration>1200</duration>
<sound>real_wow/fireball_impact.mp3</sound>
</effect>

-- effect

<name>on_fire</name>
<base>flame</base>
<spawn minX="-50" maxx="50" minY="-70" maxY="70" minAmount="10" maxAmount="20"/>
<respawn minAmount="1" maxAmount="5" delay="100"/>
<speed spawnPattern="rising" movePattern="rising" startMin="8" startMax="16" changeMin="0.0" changeMax="-0.1"/>
<size startMin="100" startMax="180" changeMin="-10" changeMax="-20"/>
,alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
<tint color="FFCC00" amount="0.40"/>
<lifetime>300</lifetime>
<duration>infinite</duration>
</effect>

<!-- DEMONIC FIRE EFFECTS -->

-- effect

<name>demonic_fire_trail</name>
<base>demon_flame</base>
<spawn minX="-25" maxx="25" minY="-25" maxY="25" minAmount="3" maxAmount="6"/>
<speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0.1" changeMax="0.3"/>
<size startMin="50" startMax="125" changeMin="-10" changeMax="-10"/>
,alpha startMin="100" startMax="100" changeMin="-10" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
<duration>500</duration>
</effect>

-- effect

<name>demonic_fire_burst</name>
<base>demon_flame</base>
<spawn minX="-25" maxx="25" minY="-25" maxY="25" minAmount="18" maxAmount="26"/>
<speed spawnPattern="starburst" movePattern="starburst" startMin="8" startMax="16" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
<size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>
,alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
<duration>1200</duration>

<file:///C:/Temp/wtf_local/rsc/xml/effects_list.xml>
<sound>real_wow/fireball_impact.mp3</sound>

<!-- ICE EFFECTS -->

<effect>
  <name>ice_trail</name>
  <base>ice</base>
  <spawn minX="-45" maxX="45" minY="-20" maxY="20" minAmount="3" maxAmount="6"/>
  <speed speed="rising" movePattern="rising" startMin="0" startMax="10" changeMin="0.1" changeMax="0.3"/>
  <size startMin="20" startMax="55" changeMin="-1" changeMax="-1"/>
  <alpha startMin="50" startMax="50" changeMin="-10" changeMax="-10"/>
  <rotatespawnPattern="starburst" startMin="0" startMax="360" changeMin="3" changeMax="12"/>
  <duration>500</duration>
</effect>

<effect>
  <name>ice_burst</name>
  <base>ice</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="18" maxAmount="24"/>
  <speed speed="rising" movePattern="starburst" startMin="10" startMax="18" changeMin="-0.2" changeMax="-0.3" capMin="0"/>
  <size startMin="20" startMax="100" changeMin="-3" changeMax="-5"/>
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="360" changeMin="-20" changeMax="20"/>
  <duration>800</duration>
  <sound>real_wow/blizzard_impact.mp3</sound>
</effect>

<effect>
  <name>frost_nova</name>
  <base>ice</base>
  <spawn position="bottom" minX="-200" maxX="200" minY="0" maxY="0" minAmount="20" maxAmount="35"/>
  <speed speed="rising" movePattern="spinning" startMin="6" startMax="12" changeMin="1" changeMax="1"/>
  <size startMin="50" startMax="110" changeMin="-3" changeMax="-5"/>
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <sound>real_wow/frost_nova.mp3</sound>
</effect>

<effect>
  <name>frozen</name>
  <staticObject position="bottom">ice_block</staticObject>
  <base>snowflake</base>
  <spawn position="bottom" minX="-50" maxX="50" minY="-25" maxY="-80" minAmount="1" maxAmount="3"/>
  <respawn position="bottom" minX="-50" maxX="50" minY="-80" maxAmount="1" delay="100"/>
  <speed speed="rising" movePattern="spinning" startMin="4" startMax="8" changeMin="0.0" changeMax="0"/>
  <size startMin="40" startMax="80" changeMin="0" changeMax="0"/>
  <alpha startMin="50" startMax="50" changeMin="-3" changeMax="-6"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <tint color="#A3EFEF" amount="0.40"/>
  <lifetime>300</lifetime>
  <duration>infinite</duration>
  <despawnEffect name="ice_burst"></despawnEffect>
  <sound>events/crunch.mp3</sound>
</effect>

<!-- SHADOW EFFECTS -->

<effect>
  <name>shadow_trail</name>
  <base>shadow</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="10" maxAmount="18"/>
  <speed speed="starburst" movePattern="implode" startMin="8" startMax="10" changeMin="3" changeMax="6"/>
  <size startMin="30" startMax="50" changeMin="-2" changeMax="-5"/>
  <alpha startMin="30" startMax="50" changeMin="-2" changeMax="-5"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <duration>300</duration>
</effect>

<effect>
  <name>shadow_burst</name>
  <base>shadow</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="20" maxAmount="45"/>
  <speed speed="starburst" movePattern="starburst" startMin="8" startMax="16" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
  <size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
  <duration>1200</duration>
  <sound>real_wow/death_coil.mp3</sound>
</effect>
<effect>
  <name>shadow_nova</name>
  <base>shadow_splash</base>
  <spawn position="bottom" minX="-300" maxX="300" minY="-150" maxY="0" minAmount="30" maxAmount="40"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <size startMin="80" startMax="100" changeMin="5" changeMax="10"/>
  <alpha startMin="100" startMax="100" changeMin="-3" changeMax="-5"/>
  <rotate startMin="0" startMax="360" changeMin="12" changeMax="24"/>
  <duration>800</duration>
  <sound>real_wow/fear.mp3</sound>
</effect>

<effect>
  <name>shadow_drain</name>
  <base>shadow_splash</base>
  <spawn position="bottom" minX="-200" maxX="200" minY="-50" maxY="0" minAmount="20" maxAmount="30"/>
  <speed spawnPattern="side" movePattern="rising" startMin="-8" startMax="-12" changeMin="3" changeMax="3"/>
  <size startMin="80" startMax="120" changeMin="2" changeMax="3"/>
  <alpha startMin="100" startMax="100" changeMin="-3" changeMax="-5"/>
  <rotate startMin="0" startMax="360" changeMin="12" changeMax="24"/>
  <duration>400</duration>
  <sound>real_wow/purge.mp3</sound>
</effect>

<effect>
  <name>curse_of_agony</name>
  <base>agony_needle</base>
  <spawn minX="-70" maxX="70" minY="-70" maxY="70" minAmount="10" maxAmount="20"/>
  <respawn minAmount="7" maxAmount="14" delay="800"/>
  <speed spawnPattern="implode" movePattern="implode" startMin="8" startMax="12" changeMin="0" changeMax="0"/>
  <size startMin="80" startMax="100" changeMin="0" changeMax="0"/>
  <alpha startMin="70" startMax="70" changeMin="-5" changeMax="-10"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <tint color="#000000" amount="0.40"/>
  <lifetime>400</lifetime>
  <duration>infinite</duration>
</effect>

<effect>
  <name>agony_trail</name>
  <base>agony_needle</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="2" maxAmount="4"/>
  <speed spawnPattern="side" movePattern="falling" startMin="3" startMax="6" changeMin="1" changeMax="1"/>
  <size startMin="60" startMax="80" changeMin="-2" changeMax="-5"/>
  <alpha startMin="60" startMax="60" changeMin="-2" changeMax="-5"/>
  <rotate spawnPattern="starburst" startMin="90" startMax="90" changeMin="0" changeMax="0"/>
  <duration>300</duration>
</effect>

<effect>
  <name>agony_burst</name>
  <base>agony_needle</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="15" maxAmount="20"/>
  <speed spawnPattern="starburst" movePattern="starburst" startMin="6" startMax="12" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
  <size startMin="120" startMax="140" changeMin="-10" changeMax="-20"/>
  <alpha startMin="40" startMax="60" changeMin="-5" changeMax="-10"/>
  <rotate spawnPattern="starburst" startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <duration>1200</duration>
  <sound>real_wow/cripple.mp3</sound>
</effect>

<effect>
  <name>life_tap</name>
  <base>blood</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="15" maxAmount="20"/>
  <speed spawnPattern="starburst" movePattern="implode" startMin="11" startMax="13" changeMin="2" changeMax="3"/>
  <size startMin="120" startMax="160" changeMin="-3" changeMax="-6"/>
  <alpha startMin="100" startMax="100" changeMin="-2" changeMax="-4"/>
  <rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
  <duration>800</duration>
  <sound>real_wow/purge.mp3</sound>
</effect>

<effect>
  <name>fear</name>
  <staticObject position="top">shadow_skull</staticObject>
  <base>shadow_splash</base>
  <spawn minX="0" maxX="0" minY="0" maxY="0" minAmount="0" maxAmount="0"/>
</effect>
<speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<size startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<alpha startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>
<tint color="990099" amount="0.5"/>
<lifetime>100</lifetime>
<duration>infinite</duration>
<sound>real-wow/fear.mp3</sound>
</effect>

<!-- GENERIC MAGIC EFFECTS -->

<effect>
  <name>magic_trail</name>
  <base>magic_spark</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="3" maxAmount="6"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <size startMin="25" startMax="50" changeMin="-3" changeMax="-5"/>
  <alpha startMin="60" startMax="60" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <duration>500</duration>
</effect>

<effect>
  <name>magic_burst</name>
  <base>magic_spark</base>
  <spawn minX="-5" maxX="5" minY="-5" maxY="5" minAmount="15" maxAmount="25"/>
  <speed spawnPattern="starburst" movePattern="starburst" startMin="0" startMax="8" changeMin="-0.3" changeMax="-0.3" capMin="0"/>
  <size startMin="60" startMax="80" changeMin="-3" changeMax="-6"/>
  <alpha startMin="80" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="0" changeMax="0"/>
  <duration>600</duration>
</effect>

<sound>events/stomp_reverb.mp3</sound>
</effect>

<!-- NATURE EFFECTS -->

<effect>
  <name>electric</name>
  <base>electric</base>
  <spawn minX="-30" maxX="30" minY="-30" maxY="30" minAmount="10" maxAmount="15"/>
  <speed spawnPattern="starburst" movePattern="starburst" startMin="8" startMax="16" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
  <size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
  <duration>1200</duration>
</effect>

<sound>events/electric.mp3</sound>
</effect>

<effect>
  <name>electric_reverse</name>
  <base>electric</base>
  <spawn minX="-100" maxX="100" minY="-100" maxY="100" minAmount="10" maxAmount="15"/>
  <speed spawnPattern="implode" movePattern="starburst" startMin="8" startMax="16" changeMin="-0.5" changeMax="-0.5" capMin="0"/>
  <size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>
  <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
  <rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
  <duration>1200</duration>
</effect>

<sound>events/electric.mp3</sound>
</effect>

<effect>
  <name>electric_slow</name>
  <base>electric</base>
  <spawn position="bottom" minX="-30" maxX="30" minY="-30" maxY="0" minAmount="8" maxAmount="12"/>
  <respawn position="bottom" minAmount="2" maxAmount="3" delay="100"/>
  <speed spawnPattern="side" movePattern="side" startMin="4" startMax="4" changeMin="-1" changeMax="-1" capMin="0"/>
  <size startMin="90" startMax="130" changeMin="-5" changeMax="-10"/>
<alpha startMin="100" startMax="100" changeMin="-3" changeMax="-5"/>
<rotate startMin="0" startMax="360" changeMin="-16" changeMax="16"/>
<lifetime>600</lifetime>
<duration>infinite</duration>
<sound>real_wow/purge.mp3</sound>
</effect>

-- effect

<name>mario_chomp_pixel</name>
<base>

<spawn minX="-10" maxX="10" minY="-10" maxY="10" minAmount="8" maxAmount="10"/>
<speed spawnPattern="starburst" movePattern="starburst" startMin="3" startMax="6" changeMin="-0.3" changeMax="-0.3"/>
<size startMin="75" startMax="125" changeMin="-10" changeMax="5.0"/>
<alpha startMin="100" startMax="100" changeMin="-10" changeMax="-10"/>

<rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>

<sound>events/mario_chomp.mp3</sound>

<duration>1200</duration>
</effect>

<!-- WEATHER EFFECTS -->

-- effect

<name>snow</name>
<base>

<spawn minX="-450" maxX="450" minY="-300" maxY="-250" minAmount="7" maxAmount="3"/>
<respawn minAmount="1" maxAmount="3" delay="600"/>

<speed spawnPattern="falling" movePattern="wave" startMin="2" startMax="6" changeMin="5" changeMax="18"/>
<size startMin="25" startMax="50" changeMin="0" changeMax="4"/>

<alpha setValue="size" startMin="100" changeMin="0" changeMax="0"/>

<rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>

<lifetime>5500</lifetime>

<duration>infinite</duration>
</effect>

-- effect

<name>rain</name>
<base>

<spawn minX="-375" maxX="375" minY="-275" maxY="-250" minAmount="1" maxAmount="3"/>
<respawn minAmount="1" maxAmount="3" delay="100"/>

<speed spawnPattern="falling" movePattern="falling" startMin="10" startMax="18" changeMin="1.5" changeMax="1.5"/>
<size startMin="25" startMax="120" changeMin="0" changeMax="4"/>

<alpha startMin="20" startMax="60" changeMin="-1" changeMax="-1"/>

<rotate startMin="0" startMax="0" changeMin="0" changeMax="0"/>

<lifetime>700</lifetime>

<duration>infinite</duration>
</effect>

<!-- QUEST EFFECTS -->

<!-- NPC EFFECTS -->

-- effect

<name>flame_strike_einstein</name>
<base>

<spawn position="bottom" minX="-100" maxX="100" minY="-30" maxY="0" minAmount="12" maxAmount="18"/>
<speed spawnPattern="rising" movePattern="falling" startMin="3" startMax="6" changeMin="-0.5" changeMax="1"/>
<size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>

<alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>

<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>

<sound>real_wow/fire_cast.mp3</sound>

<duration>500</duration>
</effect>

-- effect

<name>flame_strike_explode_einstein</name>
<base>

<spawn position="bottom" minX="-100" maxX="100" minY="-60" maxY="0" minAmount="18" maxAmount="24"/>
<speed spawnPattern="rising" movePattern="falling" startMin="8" startMax="16" changeMin="1" changeMax="3"/>
<size startMin="75" startMax="180" changeMin="-5" changeMax="-10"/>

<alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>

<rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>

<sound>real_wow/fireball_impact.mp3</sound>

<duration>800</duration>
</effect>

-- effect

<name>gravity_lapse_einstein</name>
<base>

<spawn position="bottom" minX="-375" maxX="375" minY="-30" maxY="0" minAmount="20" maxAmount="35"/>
<speed spawnPattern="rising" movePattern="falling" startMin="6" startMax="12" changeMin="1" changeMax="1"/>

<size startMin="110" startMax="160" changeMin="-3" changeMax="-5"/>
<alpha startMin="100°" startMax="100°" changeMin="-5°" changeMax="-10°"/>
<rotate startMin="0°" startMax="360°" changeMin="-6°" changeMax="-12°"/>
<sound>real wow/purge.mp3</sound>
<duration>800</duration>
</effect>

<name>consecrate_daly</name>
<base>flame</base>
<spawn position="bottom" minX="-200°" maxX="200°" minY="0°" maxY="30°" minAmount="30°" maxAmount="60°"/>
<speed spawnPattern="starburst" movePattern="rising" startMin="1°" startMax="3°" changeMin="1°" changeMax="3°"/>
<size startMin="75°" startMax="180°" changeMin="-5°" changeMax="-10°"/>
<alpha startMin="100°" startMax="100°" changeMin="-5°" changeMax="-10°"/>
<rotate startMin="0°" startMax="360°" changeMin="3°" changeMax="12°"/>
<sound>real wow/fire_cast.mp3</sound>
<duration>800</duration>
</effect>

<name>blizzard_hegemon</name>
<base>ice</base>
<spawn position="bottom" minX="-30°" maxX="30°" minY="-60°" maxY="0°" minAmount="1°" maxAmount="1°"/>
<speed spawnPattern="falling" movePattern="falling" startMin="0°" startMax="0°" changeMin="1°" changeMax="1°"/>
<size startMin="40°" startMax="80°" changeMin="-2°" changeMax="4°"/>
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<duration>500</duration>
</effect>

<name>blizzard_hegemon_impact</name>
<base>ice</base>
<spawn position="bottom" minX="-30°" maxX="30°" minY="-30°" maxY="0°" minAmount="1°" maxAmount="1°"/>
<speed spawnPattern="rising" movePattern="falling" startMin="6°" startMax="12°" changeMin="1°" changeMax="1°"/>
<size startMin="50°" startMax="110°" changeMin="-3°" changeMax="-5°"/>
<alpha startMin="100°" startMax="100°" changeMin="-10°" changeMax="-10°"/>
<rotate startMin="0°" startMax="360°" changeMin="0°" changeMax="0°"/>
<sound>real wow/blizzard_impact.mp3</sound>
</effect>

<name>flame_wreath_hegemon</name>
<base>flame</base>
<spawn position="bottom" minX="-400°" maxX="400°" minY="-50°" maxY="0°" minAmount="40°" maxAmount="60°"/>
<speed spawnPattern="side" movePattern="side" startMin="1°" startMax="3°" changeMin="1°" changeMax="1°"/>
<size startMin="75°" startMax="180°" changeMin="-5°" changeMax="-10°"/>
<alpha startMin="100°" startMax="100°" changeMin="-5°" changeMax="-10°"/>
<rotate startMin="0°" startMax="360°" changeMin="3°" changeMax="12°"/>
<duration>800</duration>
<sound>real wow/fireball_impact.mp3</sound>
</effect>

<name>flame_wreath_incup</name>
<base>flame</base>
<spawn position="bottom" minX="-30°" maxX="30°" minY="-30°" maxY="0°" minAmount="8°" maxAmount="12°"/>
<respawn position="bottom" minAmount="2°" maxAmount="3°" delay="100°"/>
<speed spawnPattern="side" movePattern="implode" startMin="4°" startMax="4°" changeMin="1°" changeMax="1°" capMin="0°"/>
<size startMin="100°" startMax="120°" changeMin="-2°" changeMax="-3°"/>
<alpha startMin="100°" startMax="100°" changeMin="-3°" changeMax="-5°"/>
<rotate startMin="0°" startMax="360°" changeMin="-16°" changeMax="16°"/>
<duration>800</duration>
<sound>real wow/fire_cast.mp3</sound>
</effect>

<name>magnetic_pull_slow</name>
<base>electric</base>
<spawn position="bottom" minX="-30°" maxX="30°" minY="-30°" maxY="0°" minAmount="8°" maxAmount="12°"/>
<respawn position="bottom" minAmount="2°" maxAmount="3°" delay="100°"/>
<speed spawnPattern="side" movePattern="side" startMin="4°" startMax="4°" changeMin="-1°" changeMax="-1°" capMin="0°"/>
<size startMin="90°" startMax="130°" changeMin="-5°" changeMax="-10°"/>
<alpha startMin="100°" startMax="100°" changeMin="-3°" changeMax="-5°"/>
<rotate startMin="0°" startMax="360°" changeMin="-16°" changeMax="16°"/>
<duration>600</duration>
</effect>

<name>magnetic_pull_fast</name>
<base>electric</base>
<spawn position="bottom" minX="-30°" maxX="30°" minY="-30°" maxY="0°" minAmount="8°" maxAmount="12°"/>
<respawn position="bottom" minAmount="2°" maxAmount="3°" delay="100°"/>
<speed spawnPattern="side" movePattern="side" startMin="4°" startMax="4°" changeMin="-1°" changeMax="-1°" capMin="0°"/>
<size startMin="90°" startMax="130°" changeMin="-5°" changeMax="-10°"/>
<alpha startMin="100°" startMax="100°" changeMin="-3°" changeMax="-5°"/>
<rotate startMin="0°" startMax="360°" changeMin="-16°" changeMax="16°"/>
<sound>real_wow/purge.mp3</sound>
</effect>
  - <effect>
    <name>arcane_blast_hegemon</name>
    <staticObject position="bottom">arcane_explosion</staticObject>
    <base>arcane_spark</base>
    <spawn minX="-100" maxX="100" minY="-100" maxY="100" minAmount="30" maxAmount="40"/>
    <speed spawnPattern="starburst" movePattern="implode" startMin="9" startMax="12" changeMin="0.3" changeMax="0.6"/>
    <size startMin="60" startMax="100" changeMin="-3" changeMax="-5"/>
    <alpha startMin="100" startMax="100" changeMin="-5" changeMax="-10"/>
    <rotate startMin="0" startMax="360" changeMin="3" changeMax="12"/>
    <duration>800</duration>
    <sound>real_wow/arcane_explosion.mp3</sound>
  </effect>
- <effect>
  <name>shadow_nova_hegemon</name>
  <base>shadow_splash</base>
  <spawn position="bottom" minX="-400" maxX="400" minY="-150" maxY="0" minAmount="30" maxAmount="40"/>
  <speed spawnPattern="rising" movePattern="rising" startMin="0" startMax="0" changeMin="0" changeMax="0"/>
  <size startMin="80" startMax="100" changeMin="5" changeMax="10"/>
  <alpha startMin="100" startMax="100" changeMin="-3" changeMax="-5"/>
  <rotate startMin="0" startMax="360" changeMin="12" changeMax="24"/>
  <duration>800</duration>
  <sound>real_wow/fear.mp3</sound>
</effect>
</effectsList>
This XML file does not appear to have any style information associated with it. The document tree is shown below.

- <levelChart>
- <!--
  level exp req based on: all quests for that level (* exp) + all kills req'd for quests (* exp) + grinding buffer
  ex: level 1 to 2 req's 1100 exp
    2 quests @ level 1 (butchery - 450 exp; thanatos - 325 exp) = 775 exp
    x kills req'd for quests (butchery (~8-20 merchants @ 40 exp e/)) = ~320-480 exp
    + grinding buffer (for overkills due to drop %) = < 100 exp
    GT = ~1100-1300 exp to ding level 2

  ex: level 2 to 3 req's 1200 exp
    3 quests w/ lev 2 reqs (bleating - 400 exp; letter_to_laura - 350 exp; daily delivery - 350) = 1100 exp
    0 kills req'd = 0 exp
    GT = 600 exp
    + grind buffer for ~200 exp needed to ding, (not inc any carry-over exp from level 1)

  Note: do not assign level req's to too many quests - it can often be better to have zones that are level specific
  with multiple quest options in them, and to foreshadow zones by giving quests that lead into them a couple levels
  in advance. a good strat is to assign level reqs @ the beginning of chains

  Level Stat caps:    10      20      30      40      50      60      70      80
  armor          100 200 300 400 500 600 700 800
  health         200 300 400 500 600 700 800 900
  spirit         200 300 400 500 600 700 800 900
  damage         20  40  60  80  100 120 140 160
-->

- <class name="pc_lump">
- <!--

-->
</class>
</levelChart>
<level health="829"mana="295"spirit="47"armor="180"damage="27"expToLevel="18500"exp="773"/>
<level health="849"mana="302"spirit="48"armor="183"damage="28"expToLevel="19000"exp="787"/>
<level health="869"mana="309"spirit="49"armor="185"damage="29"expToLevel="19500"exp="801"/>
<level health="889"mana="316"spirit="50"armor="188"damage="30"expToLevel="20000"exp="814"/>
<!-- Level 41-50 Kills Per Level 24.77 -->
<level health="910"mana="323"spirit="51"armor="191"damage="31"expToLevel="20500"exp="827"/>
<level health="930"mana="330"spirit="52"armor="194"damage="32"expToLevel="21000"exp="840"/>
<level health="950"mana="337"spirit="53"armor="196"damage="33"expToLevel="21500"exp="852"/>
<level health="970"mana="344"spirit="54"armor="199"damage="34"expToLevel="22000"exp="864"/>
<level health="991"mana="351"spirit="55"armor="202"damage="35"expToLevel="22500"exp="876"/>
<level health="1011"mana="358"spirit="56"armor="205"damage="36"expToLevel="23000"exp="887"/>
<level health="1031"mana="366"spirit="57"armor="208"damage="37"expToLevel="23500"exp="898"/>
<level health="1051"mana="373"spirit="58"armor="210"damage="38"expToLevel="24000"exp="909"/>
<level health="1072"mana="380"spirit="59"armor="213"damage="39"expToLevel="24500"exp="919"/>
<level health="1092"mana="387"spirit="60"armor="216"damage="40"expToLevel="25000"exp="930"/>
<!-- Level 51-60 Kills Per Level 27.13 -->
<level health="1112"mana="394"spirit="61"armor="219"damage="42"expToLevel="25500"exp="939"/>
<level health="1132"mana="401"spirit="62"armor="222"damage="43"expToLevel="26000"exp="949"/>
<level health="1153"mana="408"spirit="63"armor="224"damage="44"expToLevel="26500"exp="958"/>
<level health="1173"mana="415"spirit="64"armor="227"damage="46"expToLevel="27000"exp="967"/>
<level health="1193"mana="422"spirit="65"armor="230"damage="47"expToLevel="27500"exp="976"/>
<level health="1213"mana="429"spirit="66"armor="233"damage="48"expToLevel="28000"exp="984"/>
<level health="1234"mana="436"spirit="67"armor="235"damage="49"expToLevel="28500"exp="992"/>
<level health="1254"mana="444"spirit="68"armor="238"damage="51"expToLevel="29000"exp="1000"/>
<level health="1274"mana="451"spirit="69"armor="241"damage="52"expToLevel="29500"exp="1007"/>
<level health="1294"mana="458"spirit="70"armor="244"damage="53"expToLevel="30000"exp="1014"/>
<!-- Level 61-70 Kills Per Level 29.86 -->
<level health="1315"mana="465"spirit="71"armor="247"damage="54"expToLevel="30500"exp="1021"/>
<level health="1335"mana="472"spirit="72"armor="249"damage="56"expToLevel="31000"exp="1027"/>
<level health="1355"mana="479"spirit="73"armor="252"damage="58"expToLevel="31500"exp="1033"/>
<level health="1375"mana="486"spirit="74"armor="255"damage="60"expToLevel="32000"exp="1039"/>
<level health="1396"mana="493"spirit="75"armor="258"damage="62"expToLevel="32500"exp="1044"/>
<level health="1416"mana="500"spirit="76"armor="261"damage="64"expToLevel="33000"exp="1050"/>
<level health="1436"mana="507"spirit="77"armor="263"damage="66"expToLevel="33500"exp="1054"/>
<level health="1456"mana="514"spirit="78"armor="266"damage="68"expToLevel="34000"exp="1059"/>
<level health="1477"mana="522"spirit="79"armor="269"damage="70"expToLevel="34500"exp="1063"/>
<level health="1497"mana="529"spirit="80"armor="272"damage="72"expToLevel="35000"exp="1067"/>
<!-- Level 71-80 Kills Per Level 33.14 -->
<level health="1517"mana="536"spirit="81"armor="274"damage="75"expToLevel="35500"exp="1071"/>
<level health="1537"mana="543"spirit="82"armor="277"damage="77"expToLevel="36000"exp="1074"/>
<level health="1557"mana="550"spirit="83"armor="280"damage="78"expToLevel="36500"exp="1077"/>
<level health="1578"mana="557"spirit="84"armor="283"damage="79"expToLevel="37000"exp="1080"/>
<level health="1598"mana="564"spirit="85"armor="286"damage="80"expToLevel="37500"exp="1082"/>
<level health="1618"mana="571"spirit="86"armor="288"damage="81"expToLevel="38000"exp="1084"/>
<level health="1639"mana="578"spirit="87"armor="291"damage="82"expToLevel="38500"exp="1086"/>
<level health="1659"mana="585"spirit="88"armor="294"damage="83"expToLevel="39000"exp="1087"/>
<level health="1679"mana="592"spirit="89"armor="297"damage="84"expToLevel="39500"exp="1088"/>
<level health="1700"mana="600"spirit="90"armor="300"damage="85"expToLevel="40000"exp="1089"/>
</class>
-- <class name="pc_phal">
<code><level health="358" mana="316" spirit="66" armor="0" damage="11" expToLevel="10000" exp="489"/>
<level health="373" mana="327" spirit="67" armor="0" damage="12" expToLevel="10500" exp="508"/>
<level health="389" mana="339" spirit="69" armor="0" damage="12" expToLevel="11000" exp="527"/>
<level health="405" mana="350" spirit="71" armor="0" damage="12" expToLevel="11500" exp="546"/>
<level health="421" mana="362" spirit="73" armor="0" damage="12" expToLevel="12000" exp="564"/>
<level health="436" mana="373" spirit="75" armor="0" damage="13" expToLevel="12500" exp="582"/>
<level health="452" mana="384" spirit="77" armor="0" damage="13" expToLevel="13000" exp="600"/>
<level health="468" mana="396" spirit="79" armor="0" damage="13" expToLevel="13500" exp="617"/>
<level health="483" mana="407" spirit="81" armor="0" damage="14" expToLevel="14000" exp="634"/>
<level health="499" mana="418" spirit="83" armor="0" damage="14" expToLevel="14500" exp="651"/>
<level health="515" mana="430" spirit="85" armor="0" damage="14" expToLevel="15000" exp="667"/>
<level health="530" mana="441" spirit="86" armor="0" damage="15" expToLevel="15500" exp="683"/>
<level health="546" mana="453" spirit="88" armor="0" damage="15" expToLevel="16000" exp="699"/>
<level health="562" mana="464" spirit="90" armor="0" damage="15" expToLevel="16500" exp="714"/>
<level health="577" mana="475" spirit="92" armor="0" damage="16" expToLevel="17000" exp="730"/>
<level health="593" mana="487" spirit="94" armor="0" damage="16" expToLevel="17500" exp="744"/>
<level health="609" mana="498" spirit="96" armor="0" damage="16" expToLevel="18000" exp="759"/>
<level health="625" mana="510" spirit="98" armor="0" damage="16" expToLevel="18500" exp="773"/>
<level health="640" mana="521" spirit="100" armor="0" damage="17" expToLevel="19000" exp="787"/>
<level health="656" mana="532" spirit="102" armor="0" damage="17" expToLevel="19500" exp="801"/>
<level health="672" mana="544" spirit="104" armor="0" damage="17" expToLevel="20000" exp="814"/>
</level>
</code>
<level health="44" mana="5" spirit="5" armor="1" damage="2" expToLevel="1000" exp="18"/>
<level health="49" mana="6" spirit="5" armor="2" damage="2" expToLevel="1500" exp="22"/>
<level health="53" mana="7" spirit="5" armor="3" damage="2" expToLevel="2000" exp="27"/>
<level health="58" mana="8" spirit="5" armor="5" damage="2" expToLevel="2500" exp="32"/>
<level health="62" mana="9" spirit="5" armor="6" damage="2" expToLevel="3000" exp="37"/>
<level health="67" mana="10" spirit="5" armor="7" damage="2" expToLevel="3500" exp="42"/>
<level health="71" mana="11" spirit="5" armor="8" damage="2" expToLevel="4000" exp="46"/>
<level health="76" mana="12" spirit="5" armor="10" damage="2" expToLevel="4500" exp="51"/>
<level health="81" mana="12" spirit="5" armor="11" damage="2" expToLevel="5000" exp="56"/>
考试通过第11-20级。

<level health="85" mana="13" spirit="5" armor="12" damage="3" expToLevel="5500" exp="60"/>
<level health="90" mana="14" spirit="5" armor="13" damage="3" expToLevel="6000" exp="64"/>
<level health="94" mana="15" spirit="5" armor="15" damage="3" expToLevel="6500" exp="69"/>
<level health="99" mana="16" spirit="5" armor="16" damage="3" expToLevel="7000" exp="73"/>
<level health="103" mana="17" spirit="5" armor="17" damage="3" expToLevel="7500" exp="78"/>
<level health="112" mana="19" spirit="6" armor="20" damage="3" expToLevel="8500" exp="85"/>
<level health="117" mana="20" spirit="6" armor="21" damage="3" expToLevel="9000" exp="90"/>
<level health="122" mana="20" spirit="6" armor="22" damage="3" expToLevel="9500" exp="93"/>
考试通过第21-30级。

<level health="126" mana="21" spirit="6" armor="24" damage="3" expToLevel="10000" exp="97"/>
考试通过第31-40级。

<level health="176" mana="31" spirit="6" armor="37" damage="5" expToLevel="15500" exp="136"/>
<level health="181" mana="32" spirit="6" armor="39" damage="5" expToLevel="16000" exp="139"/>
<level health="185" mana="33" spirit="7" armor="40" damage="5" expToLevel="16500" exp="142"/>
<level health="190" mana="34" spirit="7" armor="41" damage="5" expToLevel="17000" exp="146"/>
<level health="194" mana="35" spirit="7" armor="43" damage="5" expToLevel="17500" exp="148"/>
<level health="199" mana="36" spirit="7" armor="44" damage="5" expToLevel="18000" exp="151"/>
<level health="204" mana="36" spirit="7" armor="45" damage="5" expToLevel="18500" exp="154"/>
<level health="208" mana="37" spirit="7" armor="46" damage="5" expToLevel="19000" exp="157"/>
<level health="213" mana="38" spirit="7" armor="48" damage="5" expToLevel="19500" exp="160"/>
考试通过第41-50级。

<level health="222" mana="40" spirit="7" armor="50" damage="6" expToLevel="20500" exp="165"/>
<level health="226" mana="41" spirit="7" armor="51" damage="6" expToLevel="21000" exp="168"/>
<level health="231" mana="42" spirit="7" armor="53" damage="6" expToLevel="21500" exp="170"/>
<level health="235" mana="43" spirit="7" armor="54" damage="6" expToLevel="22000" exp="172"/>
<level health="240" mana="44" spirit="7" armor="55" damage="6" expToLevel="22500" exp="175"/>
<level health="245" mana="44" spirit="7" armor="56" damage="6" expToLevel="23000" exp="177"/>
<level health="249" mana="45" spirit="7" armor="58" damage="6" expToLevel="23500" exp="179"/>
<level health="254" mana="46" spirit="7" armor="59" damage="6" expToLevel="24000" exp="181"/>
<level health="258" mana="47" spirit="8" armor="60" damage="6" expToLevel="24500" exp="183"/>
考试通过第51-60级。

<level health="267" mana="49" spirit="8" armor="63" damage="7" expToLevel="25500" exp="187"/>
<level health="272" mana="50" spirit="8" armor="64" damage="7" expToLevel="26000" exp="189"/>
<level health="276" mana="51" spirit="8" armor="65" damage="7" expToLevel="26500" exp="191"/>
<level health="281" mana="51" spirit="8" armor="67" damage="7" expToLevel="27000" exp="193"/>
<level health="286" mana="52" spirit="8" armor="68" damage="7" expToLevel="27500" exp="195"/>
<level health="290" mana="53" spirit="8" armor="69" damage="7" expToLevel="28000" exp="196"/>
<level health="295" mana="54" spirit="8" armor="70" damage="7" expToLevel="28500" exp="198"/>
<level health="299" mana="55" spirit="8" armor="72" damage="7" expToLevel="29000" exp="200"/>
<level health="304" mana="56" spirit="8" armor="73" damage="7" expToLevel="29500" exp="201"/>
<level health="308" mana="57" spirit="8" armor="74" damage="7" expToLevel="30000" exp="202"/>
考试通过第61-70级。

<level health="313" mana="58" spirit="8" armor="75" damage="8" expToLevel="30500" exp="204"/>
<level health="317" mana="59" spirit="8" armor="77" damage="8" expToLevel="31000" exp="205"/>
<level health="322" mana="59" spirit="8" armor="78" damage="8" expToLevel="31500" exp="206"/>
<level health="327" mana="60" spirit="8" armor="79" damage="8" expToLevel="32000" exp="207"/>
<level health="331" mana="61" spirit="9" armor="81" damage="8" expToLevel="32500" exp="208"/>
<level health="336" mana="62" spirit="9" armor="82" damage="8" expToLevel="33000" exp="210"/>
<level health="259" mana="303" spirit="82" armor="0" damage="5" expToLevel="16000" exp="699"/>
<level health="266" mana="310" spirit="84" armor="0" damage="6" expToLevel="16500" exp="714"/>
<level health="273" mana="318" spirit="86" armor="0" damage="6" expToLevel="17000" exp="730"/>
<level health="281" mana="325" spirit="88" armor="0" damage="6" expToLevel="17500" exp="744"/>
<level health="288" mana="332" spirit="90" armor="0" damage="6" expToLevel="18000" exp="759"/>
<level health="295" mana="339" spirit="92" armor="0" damage="6" expToLevel="18500" exp="773"/>
<level health="302" mana="346" spirit="94" armor="0" damage="6" expToLevel="19000" exp="787"/>
<level health="309" mana="354" spirit="96" armor="0" damage="6" expToLevel="19500" exp="801"/>
<level health="316" mana="361" spirit="98" armor="0" damage="6" expToLevel="20000" exp="814"/>
</class>

<!-- Level 1-10 Kills Per Level 2.56 -->
<level health="450" mana="808" spirit="202" armor="100" damage="10" expToLevel="500" exp="195"/>
<level health="510" mana="848" spirit="202" armor="106" damage="12" expToLevel="1000" exp="270"/>
<level health="570" mana="888" spirit="212" armor="112" damage="15" expToLevel="1500" exp="344"/>
<level health="630" mana="928" spirit="222" armor="118" damage="18" expToLevel="2000" exp="418"/>
<level health="690" mana="968" spirit="232" armor="125" damage="21" expToLevel="2500" exp="490"/>
<level health="750" mana="1008" spirit="242" armor="131" damage="24" expToLevel="3000" exp="562"/>
<level health="810" mana="1048" spirit="252" armor="137" damage="27" expToLevel="3500" exp="633"/>
<level health="870" mana="1088" spirit="262" armor="144" damage="30" expToLevel="4000" exp="703"/>
<level health="931" mana="1128" spirit="272" armor="150" damage="33" expToLevel="4500" exp="772"/>
<level health="991" mana="1168" spirit="282" armor="156" damage="36" expToLevel="5000" exp="840"/>
</class>

<!-- Level 11-20 Kills Per Level 6.06 -->
<level health="1051" mana="1208" spirit="282" armor="163" damage="39" expToLevel="5500" exp="907"/>
<level health="1111" mana="1248" spirit="292" armor="169" damage="42" expToLevel="6000" exp="973"/>
<level health="1171" mana="1288" spirit="302" armor="175" damage="44" expToLevel="6500" exp="1038"/>
<level health="1231" mana="1328" spirit="312" armor="182" damage="47" expToLevel="7000" exp="1102"/>
<!-- Level chart.xml -->

<levelChart>

<!-- Level 51-60 Kills Per Level 4.52 -->
<level health="8329" mana="4721" spirit="93" armor="645" damage="85" expToLevel="22500" exp="5256"/>
<level health="8491" mana="4815" spirit="94" armor="655" damage="87" expToLevel="23000" exp="5325"/>
<level health="8653" mana="4908" spirit="94" armor="665" damage="89" expToLevel="23500" exp="5391"/>
<level health="8815" mana="5002" spirit="95" armor="675" damage="91" expToLevel="24000" exp="5456"/>
<level health="8977" mana="5096" spirit="96" armor="686" damage="93" expToLevel="24500" exp="5519"/>
<level health="9139" mana="5189" spirit="97" armor="696" damage="94" expToLevel="25000" exp="5580"/>

<!-- Level 61-70 Kills Per Level 4.97 -->
<level health="9301" mana="5283" spirit="97" armor="706" damage="96" expToLevel="25500" exp="5639"/>
<level health="9463" mana="5377" spirit="98" armor="716" damage="98" expToLevel="26000" exp="5696"/>
<level health="9625" mana="5470" spirit="99" armor="726" damage="100" expToLevel="26500" exp="5751"/>
<level health="9787" mana="5564" spirit="100" armor="736" damage="102" expToLevel="27000" exp="5805"/>
<level health="9949" mana="5658" spirit="101" armor="746" damage="104" expToLevel="27500" exp="5858"/>
<level health="10111" mana="5751" spirit="101" armor="756" damage="105" expToLevel="28000" exp="5906"/>
<level health="10273" mana="5845" spirit="102" armor="767" damage="107" expToLevel="28500" exp="5954"/>
<level health="10435" mana="5939" spirit="103" armor="777" damage="109" expToLevel="29000" exp="6000"/>
<level health="10597" mana="6032" spirit="104" armor="787" damage="111" expToLevel="29500" exp="6044"/>
<level health="10759" mana="6126" spirit="104" armor="797" damage="113" expToLevel="30000" exp="6086"/>

<!-- Level 61-70 Kills Per Level 4.97 -->
<level health="10921" mana="6220" spirit="105" armor="807" damage="115" expToLevel="30500" exp="6126"/>
<level health="11083" mana="6313" spirit="106" armor="817" damage="116" expToLevel="31000" exp="6165"/>
<level health="11245" mana="6407" spirit="107" armor="827" damage="118" expToLevel="31500" exp="6201"/>
<level health="11407" mana="6501" spirit="107" armor="837" damage="120" expToLevel="32000" exp="6236"/>
<level health="11569" mana="6594" spirit="108" armor="848" damage="122" expToLevel="32500" exp="6269"/>
<level health="11731" mana="6688" spirit="109" armor="858" damage="124" expToLevel="33000" exp="6300"/>
<level health="11893" mana="6782" spirit="110" armor="868" damage="126" expToLevel="33500" exp="6329"/>
<level health="12055" mana="6875" spirit="110" armor="878" damage="127" expToLevel="34000" exp="6356"/>
<level health="12217" mana="6969" spirit="111" armor="888" damage="129" expToLevel="34500" exp="6381"/>
<level health="12379" mana="7063" spirit="112" armor="898" damage="131" expToLevel="35000" exp="6405"/>

<!-- Level 71-80 Kills Per Level 5.52 -->
<level health="12541" mana="7156" spirit="113" armor="908" damage="133" expToLevel="35500" exp="6426"/>
<level health="12703" mana="7250" spirit="113" armor="918" damage="135" expToLevel="36000" exp="6446"/>
<level health="12865" mana="7344" spirit="114" armor="929" damage="137" expToLevel="36500" exp="6464"/>
<level health="13027" mana="7437" spirit="115" armor="939" damage="138" expToLevel="37000" exp="6480"/>
<level health="13189" mana="7531" spirit="116" armor="949" damage="140" expToLevel="37500" exp="6494"/>
<level health="13351" mana="7625" spirit="116" armor="959" damage="142" expToLevel="38000" exp="6506"/>
<level health="13513" mana="7718" spirit="117" armor="969" damage="144" expToLevel="38500" exp="6516"/>
<level health="13675" mana="7812" spirit="118" armor="979" damage="146" expToLevel="39000" exp="6525"/>
<level health="13837" mana="7906" spirit="119" armor="989" damage="148" expToLevel="39500" exp="6531"/>
<level health="14000" mana="8000" spirit="120" armor="1000" damage="150" expToLevel="40000" exp="6536"/>
</levelChart>
This XML file does not appear to have any style information associated with it. The document tree is shown below.

```xml
<itemList>
  <!-- temp bonuses can include: every single type of stat that an item can normally possess, such as damage health mana spirit armor
      restore/deplete only works on health mana
-->
  <item>
    <name>gold_coin</name>
    <dispName>Internal Item (Do Not Use)</dispName>
    <dropImage>rsc/img/items/coin/gold.gif</dropImage>
    <copper>10000</copper>
  </item>
  <item>
    <name>silver_coin</name>
    <dispName>Internal Item (Do Not Use)</dispName>
    <dropImage>rsc/img/items/coin/silver.gif</dropImage>
    <copper>100</copper>
  </item>
  <item>
    <name>copper_coin</name>
    <dispName>Internal Item (Do Not Use)</dispName>
    <dropImage>rsc/img/items/coin/copper.gif</dropImage>
    <copper>1</copper>
  </item>
  <!-- consumables -->
  <item>
    <name>mario_flower</name>
    <dispName>Flower Power</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/consume/flower_inv.gif</invImage>
    <type>consumable</type>
    <cost>20000</cost>
    <stack>20</stack>
    <proc>
      <effect type="restore" name="mana" value="600"/>
      <effect type="sfx" name="mario_flower_power"/>
    </proc>
  </item>
  <item>
    <name>mario_one_up</name>
    <dispName>1 Up</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/consume/one_up_inv.gif</invImage>
    <type>consumable</type>
    <cost>10000</cost>
    <stack>20</stack>
    <proc>
      <effect type="restore" name="health" value="750"/>
    </proc>
  </item>
</itemList>
```
<item>
  <name>mario_mushroom</name>
  <dispName>Mushroom</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/consume/mushroom_inv.gif</invImage>
  <type>consumable</type>
  <cost>10000</cost>
  <stack>20</stack>
  <proc>
    <effect type="tempstat" name="haste" value="40" duration="15000" applyTo="self"
              sfx="mario_mushroom_power"/>
    <effect type="tempstat" name="spell_haste" value="40" duration="15000" applyTo="self"/>
    <effect type="tempstat" name="speed" value="40" duration="15000" applyTo="self"/>
    <effect type="tempstat" name="jump" value="40" duration="15000" applyTo="target"/>
  </proc>
</item>

- <item>
  <name>mario_starman</name>
  <dispName>Starman</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/consume/starman_inv.gif</invImage>
  <type>consumable</type>
  <cost>40000</cost>
  <stack>20</stack>
  <proc>
    <effect type="shield" value="10000" duration="9000" sfx="mario_star_power"/>
  </proc>
</item>

- <item>
  <name>firstaid</name>
  <dispName>First Aid</dispName>
  <dropImage>rsc/img/items/consume/firstaid_item.gif</dropImage>
  <invImage>rsc/img/items/consume/firstaid_inv.gif</invImage>
  <type>consumable</type>
  <cost>120</cost>
  <stack>10</stack>
  <proc>
    <effect type="restore" name="health" value="40"/>
    <effect type="sfx" name="heal"/>
  </proc>
</item>

- <item>
  <name>raw_meat</name>
  <dispName>Raw Meat</dispName>
  <dropImage>rsc/img/items/consume/raw_meat_item.gif</dropImage>
  <invImage>rsc/img/items/consume/raw_meat_inv.gif</invImage>
  <type>consumable</type>
  <cost>60</cost>
  <stack>10</stack>
  <proc>
    <effect type="damage" name="health" value="25"/>
    <effect type="sfx" name="ache"/>
  </proc>
</item>
<item>
  <name>water</name>
  <dispName>Flask of Water</dispName>
  <dropImage>rsc/img/items/consume/water_item.gif</dropImage>
  <invImage>rsc/img/items/consume/water_inv.gif</invImage>
  <type>consumable</type>
  <rarity>common</rarity>
  <cost>600</cost>
  <stack>20</stack>
  <proc>
    <effect type="restore" name="mana" value="10"/>
    <effect type="hot" name="mana" value="80" duration="12000"/>
    <effect type="sfx" name="drink"/>
  </proc>
</item>

<item>
  <name>beer</name>
  <dispName>Mug O' Beer</dispName>
  <dropImage>rsc/img/items/consume/beer_item.gif</dropImage>
  <invImage>rsc/img/items/consume/beer_inv.gif</invImage>
  <type>consumable</type>
  <cost>700</cost>
  <stack>20</stack>
  <proc>
    <effect type="restore" name="mana" value="60"/>
    <effect type="control" name="stun" duration="3000" applyTo="self" sfx="drunk"/>
  </proc>
  <flavor>Now legalized for users under level 21.</flavor>
</item>

<item>
  <name>bread</name>
  <dispName>Bread</dispName>
  <dropImage>rsc/img/items/consume/bread_item.gif</dropImage>
  <invImage>rsc/img/items/consume/bread_inv.gif</invImage>
  <type>consumable</type>
  <rarity>common</rarity>
  <cost>600</cost>
  <stack>20</stack>
  <proc>
    <effect type="restore" name="health" value="10"/>
    <effect type="hot" name="health" value="80" duration="12000"/>
    <effect type="sfx" name="eat"/>
  </proc>
</item>

<item>
  <name>apple</name>
  <dispName>Apple</dispName>
  <dropImage>rsc/img/items/consume/apple_item.gif</dropImage>
  <invImage>rsc/img/items/consume/apple_inv.gif</invImage>
  <requirement>
    <condition type="level" value="1"/>
  </requirement>
  <type>consumable</type>
  <rarity>common</rarity>
  <cost>600</cost>
  <stack>20</stack>
  <proc>
<flavor>How do you like them apples?</flavor>

−

−

<flavor>Just don't ask where it came from.</flavor>

−

<flavor>Oh so sweet. You know what I mean.</flavor>

−

<flavor>All juiced up and ready to go!</flavor>

−

<flavor>Elixir of Health</flavor>
<item>
  <name>mana_pot</name>
  <dispName>Elixir of Mana</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/consume/manapot_inv.gif</invImage>
  <type>consumable</type>
  <rarity>common</rarity>
  <cost>1500</cost>
  <stack>5</stack>
  <proc>
    <effect type="restore" name="health" value="60" variation="20" applyTo="self"/>
    <effect type="sfx" name="heal"/>
  </proc>
</item>

<item>
  <name>speed_boost_device</name>
  <dispName>Space-Time Hourglass</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_012_inv.gif</invImage>
  <type>consumable</type>
  <rarity>common</rarity>
  <cost>1500</cost>
  <stack>5</stack>
  <proc>
    <effect type="tempstat" name="speed" value="80" duration="10000" applyTo="self" sfx="rocket"/>
  </proc>
</item>

<item>
  <name>jump_boost_device</name>
  <dispName>Jetpack Attachment</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_020_inv.gif</invImage>
  <type>consumable</type>
  <rarity>common</rarity>
  <cost>1500</cost>
  <stack>5</stack>
  <proc>
    <effect type="tempstat" name="jump" value="80" duration="10000" applyTo="self" sfx="rocket"/>
  </proc>
</item>

<item>
  <name>gramsci_journal</name>
  <dispName>Gramsci's Notebook</dispName>
  <dropImage>rsc/img/items/quest/book_item.gif</dropImage>
  <invImage>rsc/img/items/quest/book_inv.gif</invImage>
  <type>quest item</type>
  <quest>talk_to_gramsci_phal</quest>
  <unique/>
</item>
<item>
  <name>item_elf</name>
  <dispName>Package</dispName>
  <dropImage>rsc/img/items/quest/package_item.gif</dropImage>
  <invImage>rsc/img/items/quest/package_inv.gif</invImage>
  <quest>daly_delivery_phal</quest>
  <unique max="1"/>
</item>

−<item>
  <name>pouch</name>
  <dispName>Pouch</dispName>
  <invImage>rsc/img/items/quest/pouch_inv.gif</invImage>
</item>

−<item>
  <name>letter</name>
  <dispName>Letter</dispName>
  <invImage>rsc/img/items/quest/letter_inv.gif</invImage>
  <type>quest item</type>
  <unique max="1"/>
</item>

−<item>
  <name>letter_stack</name>
  <dispName>Letter Stack</dispName>
  <invImage>rsc/img/items/quest/letter_stack_inv.gif</invImage>
</item>

−<item>
  <name>page</name>
  <dispName>Page</dispName>
  <invImage>rsc/img/items/quest/page_inv.gif</invImage>
</item>

−<item>
  <name>page_roll</name>
  <dispName>Worn Page</dispName>
  <dropImage>rsc/img/items/quest/page_item.gif</dropImage>
  <invImage>rsc/img/items/quest/page_roll_inv.gif</invImage>
  <type>quest item</type>
  <unique max="6"/>
  <stack>6</stack>
  <flavor>The text is written in blue.</flavor>
</item>

−<item>
  <name>patch_notes</name>
  <dispName>Final Encrypted Page</dispName>
  <dropImage>rsc/img/items/quest/page_item.gif</dropImage>
  <invImage>rsc/img/items/quest/page_roll_inv.gif</invImage>
  <type>quest item</type>
  <unique/>
  −<flavor>
The sheet is filled with rows after rows of numbers.  
</flavor>
</item>

−<item>
  <name>paper</name>
  <dispName>Paper</dispName>
  <invImage>rsc/img/items/quest/page_item_inv.gif</invImage>
  <cost>100</cost>
  <stack>10</stack>
</item>
- <item>
  <name>scroll</name>
  <dispName>Scroll</dispName>
  <invImage>rsc/img/items/quest/scroll_inv.gif</invImage>
  <type>quest</type>
</item>
- <item>
  <name>ink</name>
  <dispName>Bottle of Ink</dispName>
  <invImage>rsc/img/items/quest/ink_inv.gif</invImage>
  <type>quest</type>
  <cost>80</cost>
  <stack>10</stack>
</item>
- <item>
  <name>head_hegemon</name>
  <dispName>Hegemon's Head</dispName>
  <dropImage>rsc/img/items/equip/misc/big_bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_009_inv.gif</invImage>
  <type>quest</type>
  <unique/>
</item>
- <item>
  <name>head_daly</name>
  <dispName>Mary Daly's Head</dispName>
  <dropImage>rsc/img/items/equip/misc/big_bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_010_inv.gif</invImage>
  <type>quest</type>
  <unique/>
</item>
- <item>
  <name>head_marx</name>
  <dispName>Carl Marx's Head</dispName>
  <dropImage>rsc/img/items/equip/misc/big_bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_009_inv.gif</invImage>
  <type>quest</type>
  <unique/>
</item>
- <item>
  <name>head_freud</name>
  <dispName>Sigmund Freud's Head</dispName>
  <dropImage>rsc/img/items/equip/misc/big_bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_009_inv.gif</invImage>
  <type>quest</type>
  <unique/>
</item>
- <item>
  <name>head_einstein</name>
  <dispName>Albert Einstein's Head</dispName>
  <dropImage>rsc/img/items/equip/misc/big_bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_006_inv.gif</invImage>
  <type>quest</type>
  <unique/>
</item>

<!-- objects that can be equipped and appear in the character ui win -->
<!-- equip - gear - left side -->
<requirement>
  <condition type="level" value="6"/>
</requirement>

<type>head</type>
<rarity>uncommon</rarity>
<cost>3900</cost>
<health>2</health>
<mana>4</mana>
<spirit>2</spirit>
<armor>14</armor>
</item>

<requirement>
  <condition type="level" value="4"/>
</requirement>

<type>head</type>
<rarity>uncommon</rarity>
<cost>2800</cost>
<damage>2</damage>
<health>3</health>
<armor>16</armor>
<flavor>It's "relatively" good.</flavor>
</item>

<name>pig_head</name>
<dispName>Pig Skin Helmet</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/head/head_001_inv.gif</invImage>

<requirement>
  <condition type="level" value="4"/>
</requirement>

<type>head</type>
<rarity>common</rarity>
<cost>30</cost>
<mana>1</mana>
<spirit>2</spirit>
<armor>4</armor>
</item>

<name>flimsy_male_mask</name>
<dispName>Flimsy Human Male Mask</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/head/head_009_inv.gif</invImage>

<requirement>
  <condition type="level" value="4"/>
</requirement>

<type>head</type>
<rarity>common</rarity>
<cost>4000</cost>
<health>2</health>
<mana>4</mana>
<spirit>4</spirit>
</item>

<name>flimsy_female_mask</name>
<dispName>Flimsy Human Female Mask</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/head/head_010_inv.gif</invImage>

<type>head</type>
<rarity>common</rarity>
<cost>1800</cost>
<mana>2</mana>
<armor>10</armor>
</item>

- <item>
  <name>penetrating_headlight</name>
  <dispName>Penetrating Headlight</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_003_inv.gif</invImage>
  <type>head</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <damage>20</damage>
  <spirit>30</spirit>
  <armor>120</armor>
</item>

- <item>
  <name>masters_monocle</name>
  <dispName>Master's Monocle</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_004_inv.gif</invImage>
  <type>head</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <damage>10</damage>
  <mana>20</mana>
  <spirit>30</spirit>
  <armor>40</armor>
</item>

- <item>
  <name>prosperos_cap</name>
  <dispName>Prospero's Cap</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_005_inv.gif</invImage>
  <requirement>
    <condition type="level" value="8" />
  </requirement>
  <type>head</type>
  <rarity>uncommon</rarity>
  <cost>4400</cost>
  <damage>2</damage>
  <health>4</health>
  <mana>2</mana>
  <armor>24</armor>
</item>

- <item>
  <name>deepspace_helm</name>
  <dispName>Deep Space Helm</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_006_inv.gif</invImage>
  <type>head</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <damage>15</damage>
  <health>20</health>
<mana>25</mana>
<armor>120</armor>
</item>

- <item>
  <name>reprimanding_circlet</name>
  <dispName>Reprimanding Circlet</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_007_inv.gif</invImage>
  <type>head</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <health>24</health>
  <mana>26</mana>
  <armor>140</armor>
</item>

- <item>
  <name>marios_cap</name>
  <dispName>Mario's Cap</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/head/head_008_inv.gif</invImage>
  <type>head</type>
  <rarity>epic</rarity>
  <cost>36000</cost>
  <health>45</health>
  <mana>30</mana>
  <armor>120</armor>
</item>

- <item>
  <name>kitty_collar</name>
  <dispName>Kitty Collar</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_001_inv.gif</invImage>
  <type>neck</type>
  <rarity>uncommon</rarity>
  <cost>1600</cost>
  <health>2</health>
  <spirit>3</spirit>
</item>

- <item>
  <name>lost_locket</name>
  <dispName>Lost Locket</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_001_inv.gif</invImage>
  <type>neck</type>
  <damage>3</damage>
  <health>10</health>
  <armor>4</armor>
</item>

- <item>
  <name>str_neck</name>
  <dispName>Necklace of Strength</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_007_inv.gif</invImage>
  <condition type="level" value="6"/>
</item>

<requirement>
  <condition type="level" value="6"/>
</requirement>

<type>neck</type>
<rarity>uncommon</rarity>
<cost>1200</cost>
<damage>3</damage>
</item>

- <item>
  <name>int_neck</name>
  <dispName>Necklace of Intelligence</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_002_inv.gif</invImage>
  <condition type="level" value="6"/>
  <type>neck</type>
  <rarity>uncommon</rarity>
  <cost>1200</cost>
  <mana>3</mana>
</item>

- <item>
  <name>stm_neck</name>
  <dispName>Necklace of Stamina</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_006_inv.gif</invImage>
  <condition type="level" value="6"/>
  <type>neck</type>
  <rarity>uncommon</rarity>
  <cost>1200</cost>
  <health>3</health>
</item>

- <item>
  <name>spi_neck</name>
  <dispName>Necklace of Spirit</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_001_inv.gif</invImage>
  <condition type="level" value="6"/>
  <type>neck</type>
  <rarity>uncommon</rarity>
  <cost>1200</cost>
  <spirit>5</spirit>
</item>

- <item>
  <name>hangmans_noose</name>
  <dispName>Hangman's Noose</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_003_inv.gif</invImage>
  <type>neck</type>
  <rarity>epic</rarity>
  <cost>10400</cost>
  <damage>12</damage>
  <health>8</health>
  <spirit>6</spirit>
</item>

- <item>
  <name>neck_of_negation</name>

<file:///C:/Temp/wtf_local/rsc/xml/item_list.xml>
<item>
  <name>Neck of Negation</name>
  <dispName>Neck of Negation</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_005_inv.gif</invImage>
  <type>neck</type>
  <rarity>epic</rarity>
  <cost>8000</cost>
  <mana>20</mana>
  <health>6</health>
</item>

<item>
  <name>Nobel's Neck</name>
  <dispName>Nobel's Neck</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_001_inv.gif</invImage>
  <type>neck</type>
  <rarity>epic</rarity>
  <cost>8000</cost>
  <damage>10</damage>
  <health>25</health>
  <mana>23</mana>
</item>

<item>
  <name>Transphobic Talisman</name>
  <dispName>Transphobic Talisman</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/neck/neck_007_inv.gif</invImage>
  <type>neck</type>
  <rarity>epic</rarity>
  <cost>10400</cost>
  <mana>10</mana>
  <spirit>42</spirit>
</item>

<!-- equip - shoulder -->

<item>
  <name>Gramsci Shoulders</name>
  <dispName>Burden of Duality</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_008_inv.gif</invImage>
  <type>shoulder</type>
  <rarity>rare</rarity>
  <cost>4800</cost>
  <damage>1</damage>
  <health>5</health>
  <mana>2</mana>
  <armor>32</armor>
</item>

<item>
  <name>Quintessence Shoulders</name>
  <dispName>Quintessence Shoulders</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_004_inv.gif</invImage>
  <type>shoulder</type>
  <condition type="level" value="6"/>
</item>
<item>
  <name>mundane_plate_shoulders</name>
  <dispName>Mundane Plate Shoulders</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_004_inv.gif</invImage>
  <type>shoulder</type>
  <rarity>common</rarity>
  <cost>6000</cost>
  <armor>20</armor>
</item>

− <item>
  <name>stealthy_shoulders</name>
  <dispName>Stealthy Pauldrons</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_002_inv.gif</invImage>
  <type>shoulder</type>
  <rarity>uncommon</rarity>
  <cost>1700</cost>
  <armor>9</armor>
</item>

− <item>
  <name>priestly_shoulders</name>
  <dispName>Priestly Pauldrons</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_001_inv.gif</invImage>
  <type>shoulder</type>
  <rarity>uncommon</rarity>
  <cost>1800</cost>
  <mana>2</mana>
  <spirit>2</spirit>
  <armor>2</armor>
</item>

− <item>
  <name>labor_shoulders</name>
  <dispName>Shoulder of the Laborer</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_004_inv.gif</invImage>
  <type>shoulder</type>
  <rarity>rare</rarity>
  <cost>3400</cost>
</item>

<requirement>
  <condition type="level" value="2"/>
</requirement>

<requirement>
  <condition type="level" value="6"/>
</requirement>
<item>
  <name>paternal_pauldrons</name>
  <dispName>Paternal Pauldrons</dispName>
  <invImage>rsc/img/items/equip/misc/bag_item.gif</invImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_005_inv.gif</invImage>
  <type>shoulder</type>
  <rarity>epic</rarity>
  <cost>26700</cost>
  <damage>10</damage>
  <mana>22</mana>
  <spirit>26</spirit>
  <armor>35</armor>
</item>

−<item>
  <name>epistemic_epaulets</name>
  <dispName>Epistemic Epaulets</dispName>
  <invImage>rsc/img/items/equip/misc/bag_item.gif</invImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_006_inv.gif</invImage>
  <type>shoulder</type>
  <damage>18</damage>
  <health>60</health>
  <mana>24</mana>
  <armor>80</armor>
</item>

−<item>
  <name>materialist_mantle</name>
  <dispName>Materialist Mantle</dispName>
  <invImage>rsc/img/items/equip/misc/bag_item.gif</invImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_006_inv.gif</invImage>
  <type>shoulder</type>
  <rarity>epic</rarity>
  <cost>25200</cost>
  <damage>20</damage>
  <health>18</health>
  <armor>100</armor>
</item>

−<item>
  <name>conductive_pads</name>
  <dispName>Conductive Pads</dispName>
  <invImage>rsc/img/items/equip/misc/bag_item.gif</invImage>
  <invImage>rsc/img/items/equip/shoulder/shoulder_007_inv.gif</invImage>
  <rarity>epic</rarity>
  <cost>25200</cost>
  <damage>18</damage>
  <health>12</health>
  <mana>10</mana>
  <armor>80</armor>
</item>

−<item>
  <name>corruptors_mantle</name>
  <dispName>Corruptor's Mantle</dispName>
</item>
<item>
    <name>shoulder</name>
    <rarity>epic</rarity>
    <cost>26000</cost>
    <health>37</health>
    <mana>24</mana>
    <armor>168</armor>
</item>

<!-- equip - chest -->
−<item>
    <name>quintessence_chest</name>
    <dispName>Quintessence Chest Plate</dispName>
    <droppedImage>rsc/img/items/equip/misc/bag_item.gif</droppedImage>
    <invImage>rsc/img/items/equip/chest/chest_005_inv.gif</invImage>
    <requirement>
        <condition type="level" value="6"/>
    </requirement>
    <type>chest</type>
    <rarity>rare</rarity>
    <cost>3900</cost>
    <mana>4</mana>
    <health>2</health>
    <armor>30</armor>
</item>
−<item>
    <name>mundane_plate_chest</name>
    <dispName>Mundane Plate Chest</dispName>
    <droppedImage>rsc/img/items/equip/misc/bag_item.gif</droppedImage>
    <invImage>rsc/img/items/equip/chest/chest_005_inv.gif</invImage>
    <type>chest</type>
    <rarity>common</rarity>
    <cost>7800</cost>
    <armor>30</armor>
</item>
−<item>
    <name>adept_chest</name>
    <dispName>Adept's Robe</dispName>
    <droppedImage>rsc/img/items/equip/misc/bag_item.gif</droppedImage>
    <invImage>rsc/img/items/equip/chest/chest_014_inv.gif</invImage>
    <requirement>
        <condition type="level" value="3"/>
    </requirement>
    <type>chest</type>
    <rarity>common</rarity>
    <cost>2200</cost>
    <mana>2</mana>
    <health>2</health>
    <spirit>2</spirit>
    <armor>6</armor>
</item>
−<item>
    <name>squire_chest</name>
    <dispName>Squire's Chestguard</dispName>
    <droppedImage>rsc/img/items/equip/misc/bag_item.gif</droppedImage>
    <invImage>rsc/img/items/equip/chest/chest_015_inv.gif</invImage>
    <requirement>
        <condition type="level" value="3"/>
    </requirement>
    <type>chest</type>
    <rarity>common</rarity>
    <cost>2200</cost>
    <mana>2</mana>
    <health>2</health>
    <spirit>2</spirit>
    <armor>6</armor>
</item>
<item>
  <name>mystic_chest</name>
  <dispName>Mystic Tunic</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_012_inv.gif</invImage>
</item>

<requirement>
  <condition type="level" value="6"/>
</requirement>

<item>
  <name>knight_chest</name>
  <dispName>Knight's Armor</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_013_inv.gif</invImage>
</item>

<requirement>
  <condition type="level" value="6"/>
</requirement>

<item>
  <name>bigger_bastard_chest</name>
  <dispName>Bigger Bastard Chest</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_002_inv.gif</invImage>
</item>

<requirement>
  <condition type="level" value="8"/>
</requirement>

<item>
  <name>guard_chest</name>
  <dispName>Vest of the Famished</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
</item>
<requirement>
    <condition type="level" value="7"/>
</requirement>

type=chest
rarity=epic
cost=4800
damage=-3
health=20
mana=-10
spirit=-10
armor=60

<item>
    <name>fragile_chest</name>
    <dispName>Fragile Chest</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/chest/chest_009_inv.gif</invImage>
    <type>chest</type>
    <rarity>uncommon</rarity>
    <cost>2000</cost>
    <damage>1</damage>
    <health>1</health>
    <armor>12</armor>
    <proc probability="0.1">
        <effect type="restore" name="health" value="3" variation="0" applyTo="self"/>
    </proc>
</item>

<item>
    <name>chestguard_of_internal_testing</name>
    <dispName>Chestguard of Internal Testing</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/misc/wool_inv.gif</invImage>
    <type>chest</type>
    <rarity>common</rarity>
    <cost>2000</cost>
    <mana>300</mana>
    <health>600</health>
    <spirit>1000</spirit>
</item>

<item>
    <name>peasant_dress</name>
    <dispName>Peasant Dress</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/chest/chest_011_inv.gif</invImage>
    <type>chest</type>
    <rarity>common</rarity>
    <cost>2300</cost>
    <spirit>5</spirit>
    <armor>6</armor>
</item>

<item>
    <name>deferential_skirt</name>
    <dispName>Deferential Skirt</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/chest/chest_010_inv.gif</invImage>
</item>
<condition type="level" value="6"/>
</requirement>
- <requirement>
  <condition type="level" value="6"/>
</requirement>
<type>chest</type>
<rarity>uncommon</rarity>
<cost>3748</cost>
<damage>4</damage>
<health>2</health>
<armor>27</armor>
</item>
- <item>
  <name>chest_of_repression</name>
  <dispName>Chest of Repression</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_005_inv.gif</invImage>
  <type>chest</type>
  <rarity>epic</rarity>
  <cost>32200</cost>
  <health>24</health>
  <damage>12</damage>
  <mana>24</mana>
  <spirit>18</spirit>
  <armor>50</armor>
</item>
- <item>
  <name>revolting_chest</name>
  <dispName>Revolting Chest</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_003_inv.gif</invImage>
  <type>chest</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <health>20</health>
  <damage>20</damage>
  <mana>24</mana>
  <spirit>36</spirit>
  <armor>160</armor>
</item>
- <item>
  <name>blue_linen_vest</name>
  <dispName>Blue Linen Vest</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_006_inv.gif</invImage>
  <type>chest</type>
  <damage>15</damage>
  <health>110</health>
  <mana>20</mana>
  <armor>110</armor>
</item>
- <item>
  <name>chest_of_chastisement</name>
  <dispName>Chest of Chastisement</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_007_inv.gif</invImage>
  <type>chest</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <damage>12</damage>
  <health>20</health>
  <mana>20</mana>
  <armor>110</armor>
</item>
<item>
  <name>marios_coveralls</name>
  <dispName>Mario's Coveralls</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_008_inv.gif</invImage>
  <type>chest</type>
  <rarity>epic</rarity>
  <cost>39500</cost>
  <damage>20</damage>
  <health>30</health>
  <mana>10</mana>
  <spirit>15</spirit>
  <armor>190</armor>
</item>

<!-- equip - back -->

<item>
  <name>olympus_robe</name>
  <dispName>Robe of Olympus</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_012_inv.gif</invImage>
  <type>chest</type>
  <rarity>epic</rarity>
  <cost>39500</cost>
  <health>4000</health>
  <mana>5000</mana>
  <spirit>2000</spirit>
  <armor>2000</armor>
</item>

<item>
  <name>olympus_armor</name>
  <dispName>Armor of Olympus</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/chest/chest_013_inv.gif</invImage>
  <type>chest</type>
  <rarity>epic</rarity>
  <cost>39500</cost>
  <health>6000</health>
  <mana>3000</mana>
  <armor>4000</armor>
</item>

<item>
  <name>mystic_cloak</name>
  <dispName>Mystic Cloak</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/back/back_008_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>back</type>
  <rarity>common</rarity>
  <cost>1600</cost>
  <health>1</health>
  <mana>1</mana>
  <spirit>2</spirit>
</item>
<item>
  <name>knight_cloak</name>
  <dispName>Knight's Cape</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/back/back_003_inv.gif</invImage>
  <type>back</type>
  <rarity>common</rarity>
  <cost>1600</cost>
  <damage>1</damage>
  <health>1</health>
  <spirit>2</spirit>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
</item>

<item>
  <name>crusty_cloak</name>
  <dispName>Crusty Cloak</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/back/back_001_inv.gif</invImage>
  <type>back</type>
  <damage>2</damage>
  <armor>3</armor>
</item>

<item>
  <name>cape_das_kapital</name>
  <dispName>Cape Das Kapital</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/back/back_006_inv.gif</invImage>
  <type>back</type>
  <rarity>epic</rarity>
  <cost>15600</cost>
  <damage>7</damage>
  <health>7</health>
  <mana>5</mana>
  <spirit>5</spirit>
  <armor>60</armor>
</item>

<item>
  <name>transference_cloak</name>
  <dispName>Transference Cloak</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/back/back_007_inv.gif</invImage>
  <type>back</type>
  <rarity>epic</rarity>
  <cost>16200</cost>
  <spirit>38</spirit>
  <armor>10</armor>
</item>

<item>
  <name>cloak_of_relativity</name>
  <dispName>Cloak of Relativity</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/back/back_005_inv.gif</invImage>
  <type>back</type>
  <rarity>epic</rarity>
</item>
<cost>16200</cost>
<damage>17</damage>
<mana>30</mana>
<armor>30</armor>
</item>
  <item>
    <name>crones_cape</name>
    <dispName>Crone's Cape</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/back/back_007_inv.gif</invImage>
    <type>back</type>
    <rarity>epic</rarity>
    <cost>16000</cost>
    <health>18</health>
    <spirit>16</spirit>
    <armor>48</armor>
  </item>
</item>
<!-- equip - wrist -->
  <item>
    <name>bigger_bastard_wrist</name>
    <dispName>Bigger Bastard Bracers</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/wrist/wrist_003_inv.gif</invImage>
    <requirement>
      <condition type="level" value="8"/>
    </requirement>
  </item>
  <item>
    <name>pig_wrist</name>
    <dispName>Pig Skin Bracers</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/wrist/wrist_001_inv.gif</invImage>
  </item>
  <item>
    <name>bachelor_wrist</name>
    <dispName>Bachelor's Bracers</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/wrist/wrist_003_inv.gif</invImage>
    <requirement>
      <condition type="level" value="6"/>
    </requirement>
  </item>
<spirit>2</spirit>
<armor>8</armor>
</item>
-<item>
  <name>bitchen_bindings</name>
  <dispName>Bitchen Bindings</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/wrist/wrist_002_inv.gif</invImage>
  <type>wrist</type>
  <rarity>uncommon</rarity>
  <cost>2000</cost>
  <mana>1</mana>
  <spirit>1</spirit>
  <armor>2</armor>
</item>
-<item>
  <name>bracers_of_breuer</name>
  <dispName>Bracers of Breuer</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/wrist/wrist_001_inv.gif</invImage>
  <type>wrist</type>
  <rarity>epic</rarity>
  <cost>16100</cost>
  <damage>6</damage>
  <mana>12</mana>
  <spirit>18</spirit>
  <armor>25</armor>
</item>
-<item>
  <name>wrists_of_rebellion</name>
  <dispName>Wrists of Rebellion</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/wrist/wrist_002_inv.gif</invImage>
  <type>wrist</type>
  <rarity>epic</rarity>
  <cost>16000</cost>
  <damage>8</damage>
  <health>12</health>
  <armor>80</armor>
</item>
-<item>
  <name>lieserls_wristguards</name>
  <dispName>Lieserl's Wristguards</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/wrist/wrist_001_inv.gif</invImage>
  <type>wrist</type>
  <rarity>epic</rarity>
  <cost>16000</cost>
  <damage>6</damage>
  <health>10</health>
  <mana>6</mana>
  <armor>55</armor>
</item>
-<item>
  <name>spinsters_bracers</name>
  <dispName>Spinster's Bracers</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<item>
  <type>shirt</type>
  <name>prison_shirt</name>
  <dispName>Prison Shirt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_001_inv.gif</invImage>
  <type>shirt</type>
</item>

-- equip - shirt -->

-<item>
  <name>white_silken_shirt</name>
  <dispName>White Silken Shirt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_001_inv.gif</invImage>
  <type>shirt</type>
</item>

-<item>
  <name>simple_blouse</name>
  <dispName>Simple Blouse</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_001_inv.gif</invImage>
  <type>shirt</type>
</item>

-<item>
  <name>billowy_black_blouse</name>
  <dispName>Billowy Black Blouse</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_002_inv.gif</invImage>
  <type>shirt</type>
</item>

-<item>
  <name>black_tuxedo_shirt</name>
  <dispName>Black Tuxedo Shirt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_002_inv.gif</invImage>
  <type>shirt</type>
</item>

-<item>
  <name>white_tuxedo_shirt</name>
  <dispName>White Tuxedo Shirt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_004_inv.gif</invImage>
  <type>shirt</type>
  <rarity>common</rarity>
  <cost>10</cost>
</item>

-<item>
  <name>surplus_shirt</name>
  <dispName>Surplus Shirt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_001_inv.gif</invImage>
</item>
<type>shirt</type>
</item>
- <item>
  <name>menarcheal_shroud</name>
  <dispName>Menarcheal Shroud</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/shirt/shirt_003_inv.gif</invImage>
  <type>shirt</type>
</item>
</item>
<!-- equip - gear - right side -->
<!-- equip - hands -->
- <item>
  <name>bigger_bastard_gloves</name>
  <dispName>Bigger Bastard Gloves</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_003_inv.gif</invImage>
  <requirement>
    <condition type="level" value="8"/>
  </requirement>
  <type>hands</type>
  <rarity>uncommon</rarity>
  <cost>3600</cost>
  <damage>2</damage>
  <health>3</health>
  <mana>2</mana>
  <armor>16</armor>
</item>
- <item>
  <name>bachelor_gloves</name>
  <dispName>Bachelor's Gloves</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_003_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>hands</type>
  <rarity>uncommon</rarity>
  <cost>3100</cost>
  <damage>2</damage>
  <mana>2</mana>
  <armor>22</armor>
</item>
- <item>
  <name>labor_gloves</name>
  <dispName>Gloves of Labor</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_002_inv.gif</invImage>
  <type>hands</type>
  <rarity>uncommon</rarity>
  <cost>1800</cost>
  <health>2</health>
  <spirit>2</spirit>
  <armor>6</armor>
</item>
- <item>
  <name>typical_gloves</name>
  <dispName>Typical Gloves</dispName>
  <type>hands</type>
  <rarity>uncommon</rarity>
  <cost>3</cost>
  <health>3</health>
  <mana>2</mana>
  <armor>16</armor>
</item>
<item>
  <name>gloves_of_grinding</name>
  <dispName>Gloves of Grinding</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_002_inv.gif</invImage>
  <type>hands</type>
  <armor>10</armor>
  <damage>58</damage>
  <health>80</health>
  <armor>80</armor>
</item>

<item>
  <name>grundrisse_gloves</name>
  <dispName>Grundrisse Gloves</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_001_inv.gif</invImage>
  <type>hands</type>
  <rarity>epic</rarity>
  <cost>26000</cost>
  <damage>20</damage>
  <health>20</health>
  <armor>100</armor>
</item>

<item>
  <name>judgement_gauntlets</name>
  <dispName>Judgement Gauntlets</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_002_inv.gif</invImage>
  <type>hands</type>
  <rarity>epic</rarity>
  <cost>26824</cost>
  <damage>6</damage>
  <health>15</health>
  <mana>20</mana>
  <spirit>6</spirit>
  <armor>50</armor>
  <proc probability="0.05">
    <effect type="damage" name="health" value="60" variation="6" applyTo="target"/>
    <effect type="sfx" name="holy_strike"/>
  </proc>
</item>

<item>
  <name>thermodynamic_mitts</name>
  <dispName>Thermodynamic Mitts</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_005_inv.gif</invImage>
  <type>hands</type>
  <damage>12</damage>
  <health>16</health>
  <mana>12</mana>
  <armor>75</armor>
</item>
<item>
  <name>mitts_of_injunction</name>
  <dispName>Mitts of Injunction</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_003_inv.gif</invImage>
  <type>hands</type>
  <rarity>epic</rarity>
  <cost>25400</cost>
  <mana>18</mana>
  <spirit>24</spirit>
  <armor>110</armor>
</item>

<item>
  <name>marios_mitts</name>
  <dispName>Mario's Mitts</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/hands/hands_008_inv.gif</invImage>
  <type>hands</type>
  <rarity>epic</rarity>
  <cost>30500</cost>
  <damage>10</damage>
  <health>20</health>
  <mana>10</mana>
  <spirit>25</spirit>
  <armor>90</armor>
</item>

<!-- equip - waist -->

<item>
  <name>bigger_bastard_belt</name>
  <dispName>Bigger Bastard Belt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_001_inv.gif</invImage>
  <type>waist</type>
  <rarity>uncommon</rarity>
  <cost>3900</cost>
  <damage>1</damage>
  <health>2</health>
  <mana>2</mana>
  <spirit>3</spirit>
  <armor>14</armor>
</item>

<requirement>
  <condition type="level" value="8"/>
</requirement>

<item>
  <name>buckle_of_labor</name>
  <dispName>Buckler of Determination</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_006_inv.gif</invImage>
  <type>waist</type>
  <rarity>uncommon</rarity>
  <cost>2000</cost>
  <health>2</health>
  <spirit>2</spirit>
  <armor>8</armor>
</item>

<item>
  <name>buckler</name>
  <dispName>The Buckler</dispName>
</item>
<item>
  <name>human_waste</name>
  <dispName>Human Waste</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_007_inv.gif</invImage>
  <type>waist</type>
  <rarity>common</rarity>
  <cost>3400</cost>
  <health>4</health>
  <armor>18</armor>
</item>

−<item>
  <name>belt_of_boldness</name>
  <dispName>Belt of Boldness</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_007_inv.gif</invImage>
  <requirement>
    <condition type="level" value="5"/>
  </requirement>
  <type>waist</type>
  <rarity>common</rarity>
  <cost>3400</cost>
  <damage>3</damage>
  <health>1</health>
  <armor>16</armor>
</item>

−<item>
  <name>belt_of_binding</name>
  <dispName>Belt of Binding</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_003_inv.gif</invImage>
  <type>waist</type>
  <rarity>epic</rarity>
  <cost>27000</cost>
  <damage>12</damage>
  <mana>24</mana>
  <spirit>26</spirit>
  <armor>30</armor>
</item>

−<item>
  <name>alienated_waste</name>
  <dispName>Alienated Waste</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_003_inv.gif</invImage>
  <type>waist</type>
  <rarity>epic</rarity>
  <cost>24000</cost>
  <damage>24</damage>
  <health>16</health>
  <armor>80</armor>
</item>

−<item>
<item>
  <name>merchants_silken_sash</name>
  <dispName>Silken Sash</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_005_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
  </requirement>
  <type>waist</type>
  <rarity>uncommon</rarity>
  <cost>4100</cost>
  <health>1</health>
  <mana>4</mana>
  <spirit>4</spirit>
  <armor>10</armor>
</item>

--

<item>
  <name>bachelor_sash</name>
  <dispName>Bachelor's Belt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_001_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>waist</type>
  <rarity>uncommon</rarity>
  <cost>3100</cost>
  <damage>1</damage>
  <mana>1</mana>
  <spirit>3</spirit>
  <armor>22</armor>
</item>

--

<item>
  <name>gravitational_cinch</name>
  <dispName>Gravitational Cinch</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_003_inv.gif</invImage>
  <type>waist</type>
  <rarity>epic</rarity>
  <cost>24000</cost>
  <damage>8</damage>
  <health>9</health>
  <mana>11</mana>
  <armor>60</armor>
</item>

--

<item>
  <name>androgenous_waste</name>
  <dispName>Androgenous Waste</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/waist/waist_006_inv.gif</invImage>
  <type>waist</type>
  <rarity>epic</rarity>
  <cost>24000</cost>
  <mana>12</mana>
  <spirit>40</spirit>
  <armor>80</armor>
</item>

-- equip - legs --

--
<name>adept_legs</name>
<dispName>Adept's Pants</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/legs/legs_010_inv.gif</invImage>

- <requirement>
  <condition type="level" value="3"/>
</requirement>

<type>legs</type>
<rarity>common</rarity>
<cost>4200</cost>
<health>1</health>
<mana>3</mana>
<spirit>2</spirit>
<armor>4</armor>
</item>

- <item>
  <name>squire_legs</name>
  <dispName>Squire's Leggings</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_011_inv.gif</invImage>

- <requirement>
  <condition type="level" value="3"/>
</requirement>

<type>legs</type>
<rarity>common</rarity>
<cost>4200</cost>
<health>1</health>
<mana>3</mana>
<armor>9</armor>
</item>

- <item>
  <name>mystic_legs</name>
  <dispName>Mystic Leggings</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_008_inv.gif</invImage>

- <requirement>
  <condition type="level" value="6"/>
</requirement>

<type>legs</type>
<rarity>common</rarity>
<cost>9848</cost>
<health>1</health>
<mana>4</mana>
<spirit>4</spirit>
<armor>10</armor>
</item>

- <item>
  <name>knight_legs</name>
  <dispName>Knight's Legplates</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_009_inv.gif</invImage>

- <requirement>
  <condition type="level" value="6"/>
</requirement>

<type>legs</type>
<rarity>common</rarity>
<cost>16700</cost>
<iitem>
<name>pig_leg</name>
<dispName>Pig Skin Trousers</dispName>
<dropImage>img/items/equip/misc/bag_item.gif</dropImage>
<invImage>img/items/equip/legs/legs_001_inv.gif</invImage>
?type>legs</type>
<rarity>common</rarity>
<cost>40</cost>
<health>1</health>
<damage>1</damage>
<brack>1</brack>
<armor>4</armor>
</iitem>

−<iitem>
<name>leather_groin_guard</name>
<dispName>Leather Groin Guard</dispName>
<dropImage>img/items/equip/misc/bag_item.gif</dropImage>
<invImage>img/items/equip/legs/legs_001_inv.gif</invImage>
?type>legs</type>
<rarity>common</rarity>
<cost>2000</cost>
<health>2</health>
<damage>1</damage>
<brack>1</brack>
<armor>8</armor>
</iitem>

−<iitem>
<name>bastards_breeches</name>
<dispName>Bastard's Breeches</dispName>
<dropImage>img/items/equip/misc/bag_item.gif</dropImage>
<invImage>img/items/equip/legs/legs_007_inv.gif</invImage>
?type>legs</type>
<rarity>common</rarity>
<cost>4000</cost>
<mana>4</mana>
<brack>6</brack>
</iitem>

−<iitem>
<name>bitchen_breeches</name>
<dispName>Bitchen Breeches</dispName>
<dropImage>img/items/equip/misc/bag_item.gif</dropImage>
<invImage>img/items/equip/legs/legs_007_inv.gif</invImage>
?type>legs</type>
<rarity>uncommon</rarity>
<cost>3200</cost>
<health>1</health>
<damage>1</damage>
<brack>3</brack>
<armor>16</armor>
</iitem>
<item>
  <name>prison_pants</name>
  <dispName>Prison Pants</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_001_inv.gif</invImage>
  <type>legs</type>
</item>

- <item>
  <name>legs_of_labor</name>
  <dispName>Legs of Labor</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_003_inv.gif</invImage>
  <type>legs</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <damage>18</damage>
  <spirit>30</spirit>
  <armor>140</armor>
</item>

- <item>
  <name>libidinal_leggings</name>
  <dispName>Libidinal Leggings</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_004_inv.gif</invImage>
  <type>legs</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <damage>18</damage>
  <mana>22</mana>
  <spirit>30</spirit>
  <armor>40</armor>
</item>

- <item>
  <name>silken_pants</name>
  <dispName>Silken Pants</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_005_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
  </requirement>
  <type>legs</type>
  <rarity>uncommon</rarity>
  <cost>4400</cost>
  <health>2</health>
  <mana>3</mana>
  <spirit>4</spirit>
  <armor>16</armor>
</item>

- <item>
  <name>bachelor_pants</name>
  <dispName>Bachelor's Pants</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_002_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>legs</type>
  <rarity>rare</rarity>

<item>
  <name>atomic_legguards</name>
  <dispName>Atomic Legguards</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_003_inv.gif</invImage>
  <type>legs</type>
  <rarity>epic</rarity>
  <cost>32000</cost>
  <damage>22</damage>
  <health>32</health>
  <mana>28</mana>
  <armor>55</armor>
</item>

<item>
  <name>legs_of_lust</name>
  <dispName>Legs of Lust</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/legs/legs_006_inv.gif</invImage>
  <type>legs</type>
  <rarity>epic</rarity>
  <cost>31600</cost>
  <damage>22</damage>
  <health>22</health>
  <mana>48</mana>
  <armor>140</armor>
</item>

<!-- equip - feet -->

<item>
  <name>typical_boots</name>
  <dispName>Typical Boots</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_005_inv.gif</invImage>
  <type>feet</type>
  <damage>2</damage>
  <health>12</health>
  <armor>8</armor>
</item>

<item>
  <name>bigger_bastard_boots</name>
  <dispName>Bastard's Booties</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_005_inv.gif</invImage>
  <type>feet</type>
  <condition type="level" value="8"/>
</item>

<item>
  <type>head</type>
  <rarity>uncommon</rarity>
  <cost>3200</cost>
  <damage>1</damage>
  <health>2</health>
  <mana>1</mana>
  <spirit>5</spirit>
  <armor>20</armor>
</item>
- <item>
  <name>bastards_booties</name>
  <dispName>Bastard's Booties</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_005_inv.gif</invImage>
  <type>feet</type>
  <rarity>common</rarity>
  <cost>3200</cost>
  <health>2</health>
  <damage>2</damage>
  <spirit>4</spirit>
</item>
- <item>
  <name>simple_clogs</name>
  <dispName>Simple Clogs</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_011_inv.gif</invImage>
  <type>feet</type>
  <rarity>common</rarity>
  <cost>2100</cost>
  <spirit>5</spirit>
  <armor>2</armor>
</item>
- <item>
  <name>slippers_of_servitude</name>
  <dispName>Slippers of Servitude</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_010_inv.gif</invImage>
  <requirement>
    <condition type="level" value="18"/>
  </requirement>
  <type>feet</type>
  <rarity>rare</rarity>
  <cost>7600</cost>
  <damage>2</damage>
  <mana>2</mana>
  <spirit>2</spirit>
  <armor>12</armor>
</item>
- <item>
  <name>bitchen_booties</name>
  <dispName>Bitchen Booties</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_005_inv.gif</invImage>
  <requirement>
    <condition type="level" value="2"/>
  </requirement>
  <type>feet</type>
  <rarity>uncommon</rarity>
  <cost>1700</cost>
  <spirit>2</spirit>
  <mana>1</mana>
  <armor>5</armor>
</item>
- <item>
  <name>prison_boots</name>

<dispName>Prison Boots</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/feet/feet_005_inv.gif</invImage>
<type>feet</type>
</item>

− <item>
  <name>boots_of_the_base</name>
  <dispName>Boots of the Base</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_004_inv.gif</invImage>
  <type>feet</type>
  <rarity>epic</rarity>
  <cost>26000</cost>
  <damage>16</damage>
  <health>18</health>
  <armor>100</armor>
</item>

− <item>
  <name>suicidal_slippers</name>
  <dispName>Suicidal Slippers</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_005_inv.gif</invImage>
  <type>feet</type>
  <rarity>epic</rarity>
  <cost>26600</cost>
  <damage>16</damage>
  <mana>18</mana>
  <spirit>18</spirit>
  <armor>18</armor>
</item>

− <item>
  <name>silken_boots</name>
  <dispName>Silken Boots</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_006_inv.gif</invImage>
  <type>feet</type>
  <rarity>uncommon</rarity>
  <cost>3800</cost>
  <health>2</health>
  <mana>3</mana>
  <spirit>3</spirit>
  <armor>12</armor>
</item>

− <item>
  <name>bachelor_boots</name>
  <dispName>Bachelor's Boots</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/feet/feet_007_inv.gif</invImage>
  <type>feet</type>
  <rarity>uncommon</rarity>
  <cost>2900</cost>
</item>
<item>
    <name>greaves_of_mass</name>
    <dispName>Greaves of Mass</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/feet/feet_004_inv.gif</invImage>
    <type>feet</type>
    <rarity>epic</rarity>
    <cost>26600</cost>
    <damage>15</damage>
    <health>19</health>
    <mana>17</mana>
    <armor>55</armor>
</item>

– <item>
    <name>gynecological_grieves</name>
    <dispName>Gyn/Ecological Grieves</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/feet/feet_007_inv.gif</invImage>
    <type>feet</type>
    <rarity>epic</rarity>
    <cost>26600</cost>
    <health>8</health>
    <mana>16</mana>
    <spirit>18</spirit>
    <armor>90</armor>
</item>

– <item>
    <name>marios_clodhoppers</name>
    <dispName>Mario's Clodhoppers</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/feet/feet_008_inv.gif</invImage>
    <type>feet</type>
    <rarity>epic</rarity>
    <cost>30000</cost>
    <health>15</health>
    <mana>30</mana>
    <spirit>20</spirit>
    <armor>80</armor>
</item>

</--- equip - ring -->

– <item>
    <name>bear_ring</name>
    <dispName>Ring of the Bear</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/finger/ring_001_inv.gif</invImage>

– <requirement>
    <condition type="level" value="5"/>
</requirement>

– <type>
    <rarity>uncommon</rarity>
    <cost>800</cost>
    <damage>1</damage>
    <health>1</health>
− <item><name>owl_ring</name><dispName>Ring of the Owl</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage><invImage>rsc/img/items/equip/finger/ring_003_inv.gif</invImage><requirement><condition type="level" value="5"/></condition></requirement><type>finger</type><rarity>uncommon</rarity><cost>800</cost><mana>1</mana><spirit>1</spirit></item>
− <item><name>gorilla_ring</name><dispName>Ring of the Gorilla</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage><invImage>rsc/img/items/equip/finger/ring_009_inv.gif</invImage><requirement><condition type="level" value="5"/></condition></requirement><type>finger</type><rarity>uncommon</rarity><cost>800</cost><damage>1</damage><mana>1</mana></item>
− <item><name>whale_ring</name><dispName>Ring of the Whale</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage><invImage>rsc/img/items/equip/finger/ring_005_inv.gif</invImage><requirement><condition type="level" value="5"/></condition></requirement><type>finger</type><rarity>uncommon</rarity><cost>800</cost><damage>1</damage><mana>1</mana><health>1</health></item>
− <item><name>beastly_band</name><dispName>Beastly Band</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage><invImage>rsc/img/items/equip/finger/ring_002_inv.gif</invImage><type>finger</type><damage>2</damage><health>8</health><armor>7</armor></item>
− <item><name>band_of_thanatos</name><dispName>Band of Thanatos</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<item>
  <name>band_of_eros</name>
  <dispName>Band of Eros</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/finger/ring_011_inv.gif</invImage>
  <type>finger</type>
  <rarity>epic</rarity>
  <cost>10400</cost>
  <damage>12</damage>
  <health>12</health>
  <mana>14</mana>
  <spirit>2</spirit>
</item>

<item>
  <name>jennys_crux</name>
  <dispName>Jenny's Crux</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/finger/ring_013_inv.gif</invImage>
  <type>finger</type>
  <rarity>epic</rarity>
  <cost>10400</cost>
  <health>14</health>
</item>

<item>
  <name>ring_of_fusion</name>
  <dispName>Ring of Fusion</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/finger/ring_008_inv.gif</invImage>
  <type>finger</type>
  <rarity>epic</rarity>
  <cost>10400</cost>
  <mana>8</mana>
  <spirit>18</spirit>
</item>

<item>
  <name>square_circlet</name>
  <dispName>Square Circlet</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/finger/ring_007_inv.gif</invImage>
  <type>finger</type>
  <rarity>epic</rarity>
  <cost>10400</cost>
  <damage>10</damage>
  <armor>75</armor>
</item>

<item>
  <name>bohrs_band</name>
  <dispName>Bohr's Band</dispName>
</item>
<item>
  <name>parthenogenic_band</name>
  <dispName>Parthenogenic Band</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/finger/ring_011_inv.gif</invImage>
  <type>finger</type>
  <rarity>epic</rarity>
  <cost>10400</cost>
  <health>16</health>
  <armor>55</armor>
</item>

<item>
  <name>ring_of_misandry</name>
  <dispName>Ring of Misandry</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/finger/ring_004_inv.gif</invImage>
  <type>finger</type>
  <rarity>epic</rarity>
  <cost>9600</cost>
  <health>12</health>
  <mana>12</mana>
</item>

<item>
  <name>activision_relic</name>
  <dispName>Vision of Tiac</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_014_inv.gif</invImage>
  <type>relic</type>
  <rarity>rare</rarity>
  <cost>13600</cost>
  <requirement>
    <condition type="level" value="8"/>
  </requirement>
  <proc probability="0.03" type="melee">
    <effect type="restore" name="mana" value="12" applyTo="self"/>
    <effect type="sfx" name="critical" applyTo="self"/>
  </proc>
</item>

<item>
  <name>viviendi_relic</name>
  <dispName>Vividien Relic</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_015_inv.gif</invImage>
  <type>relic</type>
  <rarity>rare</rarity>
  <cost>13600</cost>
  <requirement>
    <condition type="level" value="8"/>
  </requirement>
</item>
<proc probability="0.03" type="cast">
  <effect type="tempstat" name="spell_haste" value="25" duration="15000" applyTo="self" sfx="arcane_aura"/>
</proc>
</item>

<item>
  <name>urn_of_oedipus</name>
  <dispName>Urn of Oedipus</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/relic/relic_005_inv.gif</invImage>
  <type>relic</type>
  <rarity>epic</rarity>
  <cost>89424</cost>
  <proc probability="0.05" type="cast">
    <effect type="projectile" name="urn_of_oedipus" description="Conjures a powerful draining vortex"/>
  </proc>
</item>

<item>
  <name>eye_of_foresight</name>
  <dispName>Eye of Foresight</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/relic/relic_006_inv.gif</invImage>
  <type>relic</type>
  <rarity>epic</rarity>
  <cost>89424</cost>
</item>

<item>
  <name>feuerbachs_thesis</name>
  <dispName>Feuerbach's Thesis</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/relic/relic_007_inv.gif</invImage>
  <type>relic</type>
  <rarity>epic</rarity>
  <cost>89424</cost>
  <activate probability="0.05" type="melee">
    <effect type="tempstat" name="haste" value="60" duration="15000" applyTo="self" sfx="slice_and_dice"/>
  </activate>
</item>

<item>
  <name>quantum_particle</name>
  <dispName>Quantum Particle</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/relic/relic_002_inv.gif</invImage>
  <type>relic</type>
  <rarity>epic</rarity>
  <cost>89424</cost>
  <activate probability="0.05" type="cast">
    <effect type="hot" name="mana" value="900" duration="15000" applyTo="self" sfx="critical"/>
    <effect type="sfx" name="critical"/>
  </activate>
</item>

<item>
  <name>prison_notes</name>
  <dispName>Prison Notes</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/relic/relic_008_inv.gif</invImage>
  <type>relic</type>
  <damage>50</damage>
  <mana>30</mana>
− <item>
  <name>relentless_relic</name>
  <dispName>Relentless Relic</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/relic/relic_001_inv.gif</invImage>
  <type>relic</type>
  <rarity>epic</rarity>
  <cost>26666</cost>
  − <proc type="cast" probability="0.05">
    <effect type="tempstat" name="spell_haste" value="60" duration="15000" applyTo="self" sfx="holy_buff"/>
  </proc>
</item>
− <item>
  <name>lethal_injector</name>
  <dispName>Lethal Injector</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/dagger_inv.gif</invImage>
  <anim>sword</anim>
  <hitEffect>dagger</hitEffect>
  − <requirement>
    <condition type="level" value="10"/>
  </requirement>
  <type>main hand</type>
  <rarity>rare</rarity>
  <cost>18752</cost>
  <damage>8</damage>
  <damageVar>6</damageVar>
  <speed>500</speed>
  − <proc probability="0.16">
    <effect type="dot" name="health" value="30" duration="6000" applyTo="target" sfx="poison" stack="3"/>
    <effect type="sfx" name="poison_splash"/>
  </proc>
</item>
− <item>
  <name>electrocution_blade</name>
  <dispName>Electrocution Blade</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/sword_inv.gif</invImage>
  <anim>sword</anim>
  <hitEffect>sword</hitEffect>
  − <requirement>
    <condition type="level" value="10"/>
  </requirement>
  <type>main hand</type>
  <rarity>rare</rarity>
  <cost>18752</cost>
  <damage>18</damage>
  <damageVar>16</damageVar>
  <speed>900</speed>
  − <proc probability="0.8">
    <effect type="tempstat" name="damage" value="-15" duration="5000" applyTo="target" sfx="electric_slow"/>
  </proc>
</item>
− <item>
  <name>guillotine_axe</name>
<dispName>Guillotine Axe</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/main_hand/axe_inv.gif</invImage>
<anim>axe</anim>
<hitEffect>axe</hitEffect>

- <requirement>
  <condition type="level" value="10"/>
</requirement>
<type>main hand</type>
<rarity>rare</rarity>
<cost>20676</cost>
<damage>23</damage>
<damageVar>34</damageVar>
<speed>1200</speed>
- <proc probability="0.05">
  <effect type="tempstat" name="armor" value="-500" duration="12000" applyTo="target" sfx="bleed"/>
</proc>
</item>

- <item>
  <name>stoning_staff</name>
  <dispName>Stoning Staff</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/staff_inv.gif</invImage>
  <anim>staff</anim>
  <hitEffect>mace</hitEffect>

  - <requirement>
    <condition type="level" value="10"/>
  </requirement>
  <type>main hand</type>
  <rarity>rare</rarity>
  <cost>26032</cost>
  <mana>6</mana>
  <spirit>12</spirit>
  <damage>10</damage>
  <damageVar>12</damageVar>
  <speed>2000</speed>
  - <proc probability="0.05">
    <effect type="control" name="banish" duration="5000" applyTo="target" tint="666666" amount="0.66"/>
  </proc>
</item>

- <item>
  <name>furious_beak</name>
  <dispName>Furious Beak</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/quill_inv.gif</invImage>
  <hitEffect>splatter</hitEffect>
  <type>main hand</type>
  <rarity>common</rarity>
  <cost>4028</cost>
  <damage>0</damage>
  <damageVar>8</damageVar>
  <speed>1000</speed>
  - <proc probability="0.08">
    <effect type="control" name="incapacitate" duration="1000" applyTo="target" sfx="incap"/>
  </proc>
</item>
<item>
  <name>daly_staff</name>
  <dispName>Staff of the Wicked</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/staff_inv.gif</invImage>
  <anim>staff</anim>
  <hitEffect>mace</hitEffect>
  <requirement>
    <condition type="level" value="4"/>
  </requirement>
  <type>main hand</type>
  <rarity>uncommon</rarity>
  <cost>8568</cost>
  <damage>8</damage>
  <damageVar>15</damageVar>
  <speed>1400</speed>
  <proc probability="0.12">
    <effect type="damage" name="mana" value="10" applyTo="target"/>
    <effect type="restore" name="mana" value="10" applyTo="self"/>
    <effect type="sfx" name="electric" applyTo="target"/>
  </proc>
</item>

− <item>
  <name>marx_dagger</name>
  <dispName>Iron Will Stabber</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/dagger_inv.gif</invImage>
  <anim>sword</anim>
  <hitEffect>dagger</hitEffect>
  <requirement>
    <condition type="level" value="4"/>
  </requirement>
  <type>main hand</type>
  <rarity>uncommon</rarity>
  <cost>8568</cost>
  <damage>3</damage>
  <damageVar>6</damageVar>
  <speed>600</speed>
</item>

− <item>
  <name>heart_stabber</name>
  <dispName>Heart Stabber</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/dagger_inv.gif</invImage>
  <anim>sword</anim>
  <hitEffect>dagger</hitEffect>
  <requirement>
    <condition type="level" value="4"/>
  </requirement>
  <type>main hand</type>
  <rarity>uncommon</rarity>
  <cost>8568</cost>
  <damage>5</damage>
  <damageVar>7</damageVar>
  <speed>600</speed>
</item>

− <item>
  <name>flame_wreath_weapon</name>
<dispName>Flame Wreath Weapon</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
type=main hand
rarity=common
damage=80
damageVar=80
speed=500
</item>

−
<item>
=name>arcane_orb_weapon</name>
<dispName>Flame Wreath Weapon</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
type=main hand
rarity=common
damage=280
damageVar=180
speed=500
</item>

−
<item>
=name>hegemon_fist</name>
<dispName>Hegemon's Fist</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
<requirement>
<condition type="level" value="20"/>
</requirement>
type=main hand
rarity=uncommon
cost=28000
damage=20
damageVar=30
speed=500
</item>

−
<item>
=name>agent_knuckle</name>
<dispName>Agent's Knuckle</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
<requirement>
<condition type="level" value="8"/>
</requirement>
type=main hand
rarity=uncommon
cost=8000
damage=0
damageVar=14
speed=500
</item>

−
<item>
=name>bastard_knuckle</name>
<dispName>Bastard's Knuckle</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
<requirement>
<condition type="level" value="8"/>
</requirement>
<item>
  <name>merchant_fist</name>
  <dispName>Merchant's Guild Knuckles</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
  <type>main hand</type>
  <rarity>uncommon</rarity>
  <cost>8000</cost>
  <damageVar>25</damageVar>
  <speed>500</speed>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
</item>

- <item>
  <name>proletariat_knuckle</name>
  <dispName>Proletariat's Knuckles</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
  <type>main hand</type>
  <rarity>common</rarity>
  <cost>7600</cost>
  <damageVar>15</damageVar>
  <speed>500</speed>
</item>

- <item>
  <name>feminist_knuckle</name>
  <dispName>Feminists' Knuckles</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/fist_inv.gif</invImage>
  <type>main hand</type>
  <rarity>common</rarity>
  <cost>7600</cost>
  <damageVar>15</damageVar>
  <speed>500</speed>
</item>

- <item>
  <name>toddler_sword</name>
  <dispName>Poorly Crafted Sword</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/sword_inv.gif</invImage>
  <anim>sword</anim>
  <hitEffect>sword</hitEffect>
  <type>main hand</type>
  <rarity>common</rarity>
  <cost>5000</cost>
  <damage>6</damage>
</item>
<item>
  <name>cleaver</name>
  <dropImage>rsc/img/items/equip/main_hand/cleaver_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/cleaver_inv.gif</invImage>
  <anim>cleaver</anim>
  <hitEffect>splatter</hitEffect>
  <dispName>Butcher's Cleaver</dispName>
  <hitEffect>axe</hitEffect>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>main hand</type>
  <rarity>common</rarity>
  <cost>10664</cost>
  <damage>14</damage>
  <damageVar>17</damageVar>
  <speed>1500</speed>
</item>

− <item>
  <name>castration_axe</name>
  <dropImage>rsc/img/items/equip/main_hand/axe_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/axe_inv.gif</invImage>
  <anim>axe</anim>
  <hitEffect>axe</hitEffect>
  <dispName>Great Axe of Castration</dispName>
  <requirement>
    <condition type="level" value="5"/>
  </requirement>
  <type>main hand</type>
  <rarity>common</rarity>
  <cost>10664</cost>
  <damage>16</damage>
  <damageVar>16</damageVar>
  <speed>1800</speed>
</item>

− <item>
  <name>mallet</name>
  <dispName>Mutton Mallet</dispName>
  <dropImage>rsc/img/items/equip/main_hand/mallet_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/mallet_inv.gif</invImage>
  <anim>mallet</anim>
  <hitEffect>mace</hitEffect>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>main hand</type>
  <rarity>uncommon</rarity>
  <cost>10544</cost>
  <damage>-16</damage>
  <damageVar>0</damageVar>
  <speed>1600</speed>
  <proc probability="1.0">
    <effect type="special" name="sheep_buff" duration="600" applyTo="target" description="Knock some sense"/>
  </proc>
</item>
into a sheep."/>
</proc>
</item>
-
<item>
  <name>olympus_axe</name>
  <dispName>Axe of Olympus</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/axe_inv.gif</invImage>
  <anim>axe</anim>
  <hitEffect>axe</hitEffect>
  <requirement>
    <condition type="level" value="10"/>
  </requirement>
  <type>main hand</type>
  <rarity>epic</rarity>
  <cost>80676</cost>
  <damage>600</damage>
  <damageVar>300</damageVar>
  <speed>2400</speed>
</item>
-
<item>
  <name>olympus_staff</name>
  <dispName>Staff of Olympus</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/main_hand/staff_inv.gif</invImage>
  <anim>staff</anim>
  <hitEffect>mace</hitEffect>
  <requirement>
    <condition type="level" value="10"/>
  </requirement>
  <type>main hand</type>
  <rarity>epic</rarity>
  <cost>86032</cost>
  <mana>2000</mana>
  <spirit>2000</spirit>
  <damage>10</damage>
  <damageVar>12</damageVar>
  <speed>2000</speed>
</item>
-
<item>
  <name>the_end_of_dreams</name>
  <dispName>The End of Dreams</dispName>
  <invImage>rsc/img/items/equip/main_hand/dreams_inv.gif</invImage>
  <hitEffect>mace</hitEffect>
  <type>main hand</type>
  <rarity>epic</rarity>
  <cost>63328</cost>
  <damage>100</damage>
  <damageVar>120</damageVar>
  <speed>800</speed>
</item>
-
<item>
  <name>crusoes_rod</name>
  <dispName>Crusoe's Rod</dispName>
  <invImage>rsc/img/items/equip/main_hand/rod_inv.gif</invImage>
  <hitEffect>mace</hitEffect>
  <type>main hand</type>
<rarity>epic</rarity>
<cost>83328</cost>
<damage>80</damage>
<damageVar>200</damageVar>
<speed>750</speed>
</item>

- <item>
  <name>milevas_claw</name>
  <dispName>Mileva's Claw</dispName>
  <invImage>rsc/img/items/equip/main_hand/claw_inv.gif</invImage>
  <hitEffect>sword</hitEffect>
  <type>main hand</type>
  <rarity>epic</rarity>
  <cost>81210</cost>
  <damage>145</damage>
  <damageVar>475</damageVar>
  <speed>750</speed>
</item>

- <item>
  <name>quill_of_praxis</name>
  <dispName>Quill of Praxis</dispName>
  <invImage>rsc/img/items/equip/main_hand/quill_inv.gif</invImage>
  <hitEffect>sword</hitEffect>
  <type>main hand</type>
  <rarity>epic</rarity>
  <cost>81210</cost>
  <damage>50</damage>
  <damageVar>32</damageVar>
  <speed>2000</speed>
</item>

- <item>
  <name>broom_of_reckoning</name>
  <dispName>Broom of Reckoning</dispName>
  <invImage>rsc/img/items/equip/main_hand/broom_inv.gif</invImage>
  <hitEffect>mace</hitEffect>
  <type>main hand</type>
  <rarity>epic</rarity>
  <cost>81210</cost>
  <damage>110</damage>
  <damageVar>140</damageVar>
  <mana>82</mana>
  <speed>3300</speed>
  <proc probability="0.10">
    <effect type="tempstat" name="damage" value="-40" duration="20000" applyTo="target"/>
  </proc>
</item>

- <item>
  <name>marios_mallet</name>
  <invImage>rsc/img/items/equip/main_hand/mmallet_inv.gif</invImage>
  <dispName>Mario's Mallet</dispName>
  <anim>mario_mallet</anim>
  <hitEffect>mace</hitEffect>
  <type>main hand</type>
  <rarity>epic</rarity>
  <cost>98085</cost>
  <damage>360</damage>
  <damageVar>380</damageVar>
  <speed>1200</speed>
  </item>
<item>
  <name>never_ending_beer</name>
  <dispName>Never Ending Beer Mug</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/consume/beer_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
  </requirement>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>13440</cost>
  <unique/>
  <activate>
    <effect type="tempstat" name="health" value="50" duration="10000" applyTo="self" sfx="drunk"/>
    <effect type="tempstat" name="speed" value="-25" duration="10000" applyTo="self"/>
    <effect type="deplete" name="mana" value="12"/>
  </activate>
  <flavor>Best use of magic. Ever.</flavor>
</item>

<item>
  <name>enraging_crystal</name>
  <dispName>Enraging Crystal</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_011_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
  </requirement>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>13440</cost>
  <unique/>
  <activate>
    <effect type="tempstat" name="damage" value="8" duration="6000" applyTo="self"/>
    <effect type="tempstat" name="damage" value="8" duration="9000" applyTo="self"/>
    <effect type="tempstat" name="damage" value="8" duration="12000" applyTo="self" sfx="enraged"/>
    <effect type="deplete" name="mana" value="12"/>
    <effect type="tempstat" name="health" value="100" duration="15000" applyTo="self" sfx="heal"/>
  </activate>
  <flavor>Crystal therapy at its worst.</flavor>
</item>

<item>
  <name>eduards_watch</name>
  <dispName>Eduard's Watch</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_010_inv.gif</invImage>
  <activate>
    <effect type="deplete" name="mana" value="30"/>
    <effect type="tempstat" name="health" value="100" duration="15000"/>
    <effect type="sfx" name="heal"/>
  </activate>
  <flavor>Who was that boy anyway?</flavor>
</item>
<activate>
  <effect type="deplete" name="mana" value="30"/>
  <effect type="tempstat" name="health" value="50" duration="15000"/>
  <effect type="sfx" name="heal"/>
</activate>

<flavor>Getting stoned isn't always bad.</flavor>

<activate>
  <effect type="deplete" name="mana" value="50"/>
  <effect type="tempstat" name="health" value="100" duration="15000"/>
  <effect type="sfx" name="heal"/>
</activate>

<flavor>Side effects may include nausea and dizziness... but it's worth it.</flavor>

<activate>
  <effect type="deplete" name="mana" value="50"/>
  <effect type="tempstat" name="health" value="10000" duration="15000"/>
</activate>

<flavor>Don't even ask... the effects are pretty perverse.</flavor>

<!-- equip - misc -->

<activate>
  <effect type="deplete" name="mana" value="50"/>
  <effect type="tempstat" name="health" value="10000" duration="15000"/>
</activate>

<flavor>Don't even ask... the effects are pretty perverse.</flavor>
<item>
  <name>homogenizing_roller</name>
  <dispName>Homogenizing Roller</dispName>
  <invImage>rsc/img/items/equip/misc/roller_inv.gif</invImage>
  <type>off hand</type>
  <damage>15</damage>
  <health>110</health>
  <armor>100</armor>
</item>

<!-- equip - Hegemon 2.0.1 -->
-

<item>
  <name>blizzard_hegemon</name>
  <dispName>Whirling Blizzard</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif</invImage>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>1</cost>
  <activate>
    <effect type="projectile" name="blizzard_hegemon" description="Casts a blizzard"/>
    <effect type="deplete" name="mana" value="10"/>
  </activate>
</item>

-

<item>
  <name>flame_wreath_hegemon</name>
  <dispName>Flame Wreath</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif</invImage>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>1</cost>
  <activate>
    <effect type="projectile" name="flame_wreath_hegemon" description="Casts a flame wreath"/>
    <effect type="special" name="ability_lock" duration="12000" applyTo="self" description="Keeps time..."/>
    <effect type="deplete" name="mana" value="240"/>
  </activate>
</item>

-

<item>
  <name>magnetic_pull_hegemon</name>
  <dispName>Magnetic Pull</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif</invImage>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>1</cost>
  <activate>
    <effect type="projectile" name="magnetic_pull_hegemon" description="Casts a gravity wave"/>
    <effect type="special" name="ability_lock" duration="12000" applyTo="self" description="Keeps time..."/>
    <effect type="deplete" name="mana" value="120"/>
  </activate>
</item>

-

<item>
  <name>weak_magnetic_pull_hegemon</name>
</item>
<dispName>Magnetic Pull</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>
  rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif
</invImage>
type<trinket/></type>
rarity>rare</rarity>
cost>1</cost>
<activate>
  <effect type="projectile" name="weak_magnetic_pull_hegemon" description="Casts a gravity wave"/>
  <effect type="special" name="ability_lock" duration="12000" applyTo="self" description=" Keeps time..."/>
  <effect type="deplete" name="mana" value="120"/>
</activate>
</item>

−<item>
  <name>arcane_blast_hegemon</name>
  <dispName>Arcane Blast</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>
    rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif
  </invImage>
type<trinket/></type>
rarity>rare</rarity>
cost>1</cost>
<activate>
  <effect type="projectile" name="arcane_blast_hegemon" description="Casts an arcane blast"/>
  <effect type="deplete" name="mana" value="120"/>
</activate>
</item>

−<item>
  <name>water_sack</name>
  <dispName>Water Sack</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>
    rsc/img/items/equip/misc/bag_inv.gif
  </invImage>
type<trinket/></type>
rarity>epic</rarity>
cost>1</cost>
<activate>
  <effect type="hot" name="mana" value="100" duration="6000" applyTo="self"/>
</activate>
</item>

−<item>
  <name>mass_stun_hegemon</name>
  <dispName>Replenishment</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>
    rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif
  </invImage>
type<trinket/></type>
rarity>rare</rarity>
cost>1</cost>
<activate>
  <effect type="projectile" name="mass_stun_hegemon" description="Casts a massive stun"/>
  <effect type="hot" name="mana" value="2000" duration="10000" applyTo="self"/>
</activate>
</item>

<item>
    <name>mass_sheep_hegemon</name>
    <dispName>Shock of Servitude</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif</invImage>
    <type>trinket</type>
    <rarity>rare</rarity>
    <cost>1</cost>
    <activate>
        <effect type="projectile" name="mass_sheep_hegemon" description="Casts a massive mind degrading wave"/>
        <effect type="deplete" name="mana" value="120"/>
    </activate>
</item>

<item>
    <name>summon_minions_hegemon</name>
    <dispName>Summon Mage Minions</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/trinket/base_talents/summon_gimp_inv.gif</invImage>
    <type>trinket</type>
    <rarity>rare</rarity>
    <cost>8000</cost>
    <unique/>
    <activate>
        <effect type="summon" name="bastard_mage" radius="500" duration="40000" applyTo="self" description="Summons a minion to fight for you"/>
        <effect type="summon" name="bastard_mage" radius="500" duration="40000" applyTo="self" description="Summons a minion to fight for you"/>
    </activate>
</item>

<item>
    <name>ability_clock_hegemon</name>
    <dispName>Time Keeper</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/trinket/base_talents/frost_nova_inv.gif</invImage>
    <type>trinket</type>
    <rarity>rare</rarity>
    <cost>1</cost>
    <activate>
        <effect type="special" name="ability_lock" duration="12000" applyTo="self" description="Keeps time..."/>
    </activate>
</item>

<item>
    <name>fireball_einstein</name>
    <dispName>Sun Fragment</dispName>
    <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
    <invImage>rsc/img/items/equip/trinket/base_talents/pyroblast_inv.gif</invImage>
    <type>trinket</type>
    <rarity>epic</rarity>
    <cost>89250</cost>
    <unique/>
<activate castTime="2000">
<effect type="projectile" name="fireball_einstein" description="Tosses a fragment of the Sun"/>
<effect type="deplete" name="mana" value="180"/>
</activate>
</item>

<item>
<name>flame_strike_einstein</name>
<dispName>Sunspot</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/trinket/base_talents/consecrate_inv.gif</invImage>
<type>trinket</type>
<rarity>epic</rarity>
<cost>89250</cost>
<unique/>
<activate castTime="1200">
<effect type="projectile" name="flame_strike_einstein" description="Casts a Sunspot"/>
<effect type="deplete" name="mana" value="180"/>
</activate>
</item>

<item>
<name>gravity_lapse_einstein</name>
<dispName>Gravity Lapse</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/trinket/base_talents/freezing_trap_inv.gif</invImage>
<type>trinket</type>
<rarity>epic</rarity>
<cost>89250</cost>
<unique/>
<activate castTime="600">
<effect type="projectile" name="gravity_lapse_einstein" description="Casts a gravity vortex"/>
<effect type="deplete" name="mana" value="46"/>
</activate>
</item>

<item>
<name>summon_arcane_orb_einstein</name>
<dispName>Summon Atomic Orb</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<invImage>rsc/img/items/equip/trinket/base_talents/arcane_explosion_inv.gif</invImage>
<type>trinket</type>
<rarity>epic</rarity>
<cost>89250</cost>
<unique/>
<activate castTime="600">
<effect type="summon" name="arcane_orb" radius="300" duration="12000" stack="3"/>
<effect type="deplete" name="mana" value="60"/>
</activate>
</item>

<item>
<name>holy_fire_daly</name>
<dispName>Soiled Flame of Feminism</dispName>
<dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<item>
  <name>consecrate_daly</name>
  <dispName>Symbol of Burning Ideology</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/consecrate_inv.gif</invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>80640</cost>
  <unique/>
  <activate castTime="600">
    <effect type="projectile" name="consecrate_daly" description="Consecrates the ground"/>
    <effect type="deplete" name="mana" value="55"/>
  </activate>
</item>

<item>
  <name>repentance_daly</name>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/shadow_bolt_inv.gif</invImage>
  <type>thrown</type>
  <dispName>Prayer Cross of Repentance</dispName>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>89250</cost>
  <unique/>
  <activate castTime="1000">
    <effect type="projectile" name="repentance_daly" description="Casts a repentance inducing bolt"/>
    <effect type="deplete" name="mana" value="75"/>
  </activate>
</item>

<item>
  <name>invigorate_daly</name>
  <dispName>Holy Invigorate</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/consecrate_inv.gif</invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>80640</cost>
  <unique/>
  <activate>
    <effect type="projectile" name="invigorate_daly" description="Casts a series of holy fire"/>
    <effect type="deplete" name="mana" value="82"/>
  </activate>
</item>
<effect type="projectile" name="invigorate_daly" description="Casts Holy Shield on the target"/>
<effect type="deplete" name="mana" value="0"/>
</activate>

- <item>
  <name>purge_shield_daly</name>
  <dispName>Holy Revert Invigorate</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>
    rsc/img/items/equip/trinket/base_talents/consecrate_inv.gif
  </invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>80640</cost>
  <unique/>
  - <activate type="melee">
    <effect type="control" name="stun" duration="6000" applyTo="target" sfx="holy_stun" description="Stuns the target"/>
    <effect type="deplete" name="mana" value="120"/>
  </activate>
</item>

- <item>
  <name>hammer_of_justice_skyhamma</name>
  <dispName>Hammer of Justice</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>
    rsc/img/items/equip/trinket/base_talents/hammer_of_justice_inv.gif
  </invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>89250</cost>
  <unique/>
  - <activate type="melee">
    <effect type="control" name="stun" duration="6000" applyTo="target" sfx="holy_stun" description="Stuns the target"/>
    <effect type="deplete" name="mana" value="120"/>
  </activate>
</item>

- <item>
  <name>crusader_strike_skyhamma</name>
  <dispName>Heroic Strike</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>
    rsc/img/items/equip/trinket/base_talents/smite_inv.gif
  </invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>89250</cost>
  <unique/>
  - <activate type="melee">
    <effect type="damage" name="health" value="1200" variation="200" applyTo="target"/>
    <effect type="deplete" name="mana" value="100"/>
    <effect type="sfx" name="blood_cloud" applyTo="target"/>
  </activate>
</item>

<!-- equip - Skyhamma -->

<!-- equip - Aoedipus -->

- <item>
  <name>curse_of_agony_aoedipus</name>
  <dropImage>rsc/xml/item_list.xml</dropImage>
</item>

<!-- file:///C:/Temp/wtf_local/rsc/xml/item_list.xml -->
<item>
  <name>Curse of Agony</name>
  <dispName>Curse of Agony</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/coa_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>10241</cost>
  <unique/>
  <activate>
    <effect type="projectile" name="curse_of_agony_aoedipus" description="Agonizingly curses your target"/>
    <effect type="deplete" name="mana" value="180"/>
  </activate>
</item>

<item>
  <name>Fear Bolt</name>
  <dispName>Fear Bolt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/fear_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>12000</cost>
  <unique/>
  <activate castTime="750">
    <effect type="projectile" name="fear_aoedipus" description="Scares the hell out of your target"/>
    <effect type="deplete" name="mana" value="320"/>
  </activate>
</item>

<item>
  <name>Demonic Wand</name>
  <dispName>Demonic Wand</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/searing_totem_inv.gif</invImage>
  <requirement>
    <condition type="level" value="2"/>
  </requirement>
  <type>trinket</type>
  <rarity>common</rarity>
  <cost>5120</cost>
  <activate castTime="1500">
    <effect type="projectile" name="gimp_fire_bolt_1" description="Casts a fire bolt"/>
    <effect type="deplete" name="mana" value="8"/>
  </activate>
</item>
The wand chants constantly in an incomprehensible demonic tongue.

To summon fire without flint or tinder...
<item>
  <name>Vanish</name>
  <dispName>Vanish</dispName>
  <dropImage>rsc/img/items/equip/trinket/base_talents/vanish_inv.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/vanish_inv.gif</invImage>
  <requirement>
    <condition type="level" value="4"/>
    <condition type="class" value="rogue"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>6880</cost>
  <unique/>
  <activate type="melee">
    <effect type="dot" name="health" value="30" duration="15000" applyTo="target" stack="3" sfx="poison" description="Poisons the target"/>
    <effect type="deplete" name="mana" value="7"/>
    <effect type="sfx" name="poison_splash" applyTo="target"/>
  </activate>
</item>

<!-- ********************************************** -->
<!-- Warlock Abilities -->
<!-- ********************************************** -->

<item>
  <name>Sap</name>
  <dispName>Sap</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/vanish_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>11200</cost>
  <unique/>
  <activate type="melee" fromStealth="true">
    <effect type="control" name="stun" duration="3000" applyTo="target" sfx="stun" description="Stuns the target"/>
    <effect type="deplete" name="mana" value="10"/>
  </activate>
</item>

<item>
  <name>Summon Gimp</name>
  <dispName>Summon Gimp</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/summon_gimp_inv.gif</invImage>
  <requirement>
    <condition type="level" value="5"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>8000</cost>
  <unique/>
  <activate castTime="800">
    <effect type="summon" name="gimp" radius="100" duration="40000" applyTo="self" description="Summons a minion to fight for you"/>
    <effect type="deplete" name="mana" value="28"/>
  </activate>
</item>
<item>
  <name>curse_of_agony_1</name>
  <dispName>Curse of Agony</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/coa_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <rarity>rare</rarity>
  <cost>10241</cost>
  <unique/>
  <activate>
    <effect type="projectile" name="curse_of_agony_1" description="Agonizingly curses your target"/>
    <effect type="deplete" name="mana" value="24"/>
  </activate>
</item>

<item>
  <name>fear_1</name>
  <dispName>Fear Bolt</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/fear_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
    <condition type="class" value="priest"/>
  </requirement>
  <rarity>rare</rarity>
  <cost>12000</cost>
  <unique/>
  <activate castTime="750">
    <effect type="projectile" name="fear_1" description="Scares the hell out of your target"/>
    <effect type="deplete" name="mana" value="32"/>
  </activate>
</item>

<item>
  <name>smite_1</name>
  <dispName>Holy Smite</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/smite_inv.gif</invImage>
  <requirement>
    <condition type="level" value="2"/>
    <condition type="class" value="priest"/>
  </requirement>
  <rarity>rare</rarity>
  <cost>6400</cost>
  <unique/>
  <activate castTime="600"/>
<effect type="projectile" name="smite_1" description="Smites target with holy blow job"/>
</effect>
<activate>
<deplete name="mana" value="10"/>
</activate>
<flavor>For those naughty, not nice. Amen.</flavor>
</item>

- <item>
  <name>smite_2</name>
  <dispName>Holy Smite</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/smite_inv.gif</invImage>
  <requirement>
    <condition type="level" value="2"/>
    <condition type="class" value="priest"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>6400</cost>
  <unique/>
  <activate castTime="600">
    <effect type="projectile" name="smite_2" description="Smites target with holy blow job"/>
    <deplete name="mana" value="12"/>
  </activate>
  <flavor>For those naughty, not nice. Amen.</flavor>
</item>

- <item>
  <name>greater_heal_1</name>
  <dispName>Heal</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/greater_heal_inv.gif</invImage>
  <requirement>
    <condition type="level" value="4"/>
    <condition type="class" value="priest"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>10000</cost>
  <unique/>
  <activate castTime="800">
    <restore name="health" value="42" variation="44" applyTo="self" description="Heal thyself"/>
    <deplete name="mana" value="24"/>
    <sfx name="holy_heal"/>
  </activate>
</item>

- <item>
  <name>holy_nova_1</name>
  <dispName>Holy Nova</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/holy_nova_inv.gif</invImage>
  <requirement>
    <condition type="level" value="4"/>
    <condition type="class" value="priest"/>
  </requirement>
</item>
<requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>8000</cost>
  <unique/>
  <activate>
    <effect type="projectile" name="holy_nova_1" description="Holy nova! Casts a cleansing torrent"/>
    <effect type="deplete" name="mana" value="25"/>
  </activate>
  <flavor>Ni?!</flavor>
</item>

- <item>
  <name>divine_shield_1</name>
  <dispName>Divine Shield</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/divine_shield_inv.gif</invImage>
  <requirement>
    <condition type="level" value="4"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>12528</cost>
  <unique/>
  <activate>
    <effect type="shield" value="60" duration="6000" applyTo="self" sfx="holy_bubble" description="Divinely shields yourself"/>
    <effect type="deplete" name="mana" value="20"/>
  </activate>
  <flavor>Praised be whatever!</flavor>
</item>

- <item>
  <name>pyroblast_1</name>
  <dispName>Pyroblast</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/pyroblast_inv.gif</invImage>
  <requirement>
    <condition type="level" value="4"/>
    <condition type="class" value="priest"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>6000</cost>
  <unique/>
  <activate castTime="2000">
    <effect type="projectile" name="pyroblast_1" description="Casts a massive fireball"/>
    <effect type="deplete" name="mana" value="30"/>
  </activate>
  <flavor>Ahhh... to summon fire without flint or tinder</flavor>
</item>

- <item>
  <name>pyroblast_2</name>
  <dispName>Pyroblast</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
<item>
  <name>hammer_of_justice_1</name>
  <dispName>Stunning Slam</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/hammer_of_justice_inv.gif</invImage>
  <requirement>
    <condition type="level" value="6"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>11200</cost>
  <unique/>
  <activate type="melee">
    <effect type="control" name="stun" duration="2500" applyTo="target" sfx="holy_stun" description="Stuns the target"/>
    <effect type="silence" duration="10000" tint="3333CC" amount="0.40"/>
  </activate>
  <flavor>For great justice!</flavor>
</item>

-- Cross Class Abilities

<item>
  <name>flurry_1</name>
  <dispName>Flurry of Blows</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/flurry_inv.gif</invImage>
  <requirement>
    <condition type="level" value="8"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>12143</cost>
  <unique/>
  <activate>
    <effect type="tempstat" name="haste" value="40" duration="8000" applyTo="self" description="Increases attack haste" sfx="slice_and_dice"/>
  </activate>
</item>
<effect type="deplete" name="mana" value="36"/>
</activate>
</item>

- <item>
  <name>rend_1</name>
  <dispName>Poisoned Stab</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/execute_inv.gif</invImage>
  <requirement>
    <condition type="level" value="3"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>6880</cost>
  <unique/>
  <activate type="melee">
    <effect type="dot" name="health" value="45" duration="30000" applyTo="target" sfx="bleed"/>
    <effect type="deplete" name="mana" value="3"/>
  </activate>
</item>

- <item>
  <name>last_stand_1</name>
  <dispName>Last Stand</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/last_stand_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>12480</cost>
  <unique/>
  <activate>
    <effect type="tempstat" name="health" value="120" duration="10000" applyTo="self" description="Buffs your health... for a bit" sfx="last_stand"/>
    <effect type="deplete" name="mana" value="30"/>
  </activate>
</item>

- <item>
  <name>freezing_trap_1</name>
  <dispName>Freezing Trap</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/freezing_trap_inv.gif</invImage>
  <requirement>
    <condition type="level" value="7"/>
  </requirement>
  <type>trinket</type>
  <rarity>rare</rarity>
  <cost>8000</cost>
  <unique/>
  <activate castTime="600">
Not the kind of icicles you'd want to suck.
- <requirement>
  <condition type="level" value="6"/>
</requirement>
<type>trinket</type>
<rarity>rare</rarity>
<cost>15119</cost>
<activate type="melee">
  <effect type="damage" name="health" value="18" variation="0" applyTo="target"/>
  <effect type="deplete" name="mana" value="7"/>
  <effect type="sfx" name="blood_cloud" applyTo="target"/>
</activate>

- <flavor>
  Warning: side effects may include prolonged exhaustion. Use as directed.
</flavor>
</item>

- <item>
  <name>execute_1</name>
  <dispName>Execution Blow</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/execute_inv.gif</invImage>
  <requirement>
    <condition type="level" value="8"/>
  </requirement>
  <activate type="melee">
    <effect type="silence" duration="6500" tint="3333CC" amount="0.40"/>
    <effect type="damage" name="health" value="150" variation="0" applyTo="target"/>
    <effect type="deplete" name="mana" value="42"/>
    <effect type="sfx" name="blood_cloud" applyTo="target"/>
  </activate>
  
  Warning: side effects may include prolonged exhaustion. Use as directed.
</flavor>
</item>

- <item>
  <name>searing_totem_1</name>
  <dispName>Searing Totem</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/searing_totem_inv.gif</invImage>
  <requirement>
    <condition type="level" value="9"/>
  </requirement>
  <activate castTime="1000">
    <effect type="summon" name="searing_totem_1" radius="0" duration="10000" applyTo="self" description="Casts a searing bolt at target"/>
  </activate>
</item>
<effect type="deplete" name="mana" value="40"/>
</activate>
</item>

- <item>
  <name>marios_flame</name>
  <DispName>Mario's Flower Power</DispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_008_inv.gif</invImage>
  <type>trinket</type>
  <unique/>
  <activate castTime="600">
    <effect type="deplete" name="mana" value="62"/>
    <effect type="projectile" name="marios_fireball" description="Casts an old-school fireball"/>
  </activate>
</item>

- <item>
  <name>symbol_of_chastity</name>
  <DispName>Symbol of Chastity</DispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_004_inv.gif</invImage>
  <type>trinket</type>
  <cost>15</cost>
  <activate>
    <effect type="deplete" name="mana" value="20"/>
    <effect type="restore" name="health" value="50"/>
    <effect type="sfx" name="holy_heal"/>
  </activate>
</item>

- <item>
  <name>shield_of_feminine_delight</name>
  <DispName>Shield of Feminine Delight</DispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_004_inv.gif</invImage>
  <type>trinket</type>
  <cost>15</cost>
  <activate>
    <effect type="shield" value="100000" duration="5000" sfx="holy_bubble"/>
    <effect type="restore" name="mana" value="1000"/>
  </activate>
</item>

- <item>
  <name>friedrichs_fish</name>
  <DispName>Friedrich's Fish</DispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_003_inv.gif</invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>110275</cost>
  <unique/>
  <activate castTime="1500" interruptable="true">
    <effect type="deplete" name="health" value="1000" variation="0" applyTo="self"/>
    <effect type="tempstat" name="armor" value="8000" duration="60000" applyTo="self" sfx="last_stand"/>
  </activate>
</item>

- <item>
  <name>tome_of_phobias</name>
  <DispName>Tome of Phobias</DispName>
<item>
  <name>tome_of_confused_identity</name>
  <dispName>Tome of Confusion</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/sap_inv.gif</invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>90532</cost>
  <unique/>
  <activate type="melee">
    <effect type="control" name="stun" duration="4000" applyTo="target" sfx="stun"/>
    <effect type="silence" duration="4500" tint="3333CC" amount="0.40"/>
    <effect type="deplete" name="mana" value="240"/>
  </activate>
</item>

<item>
  <name>tome_of_cursed_touch</name>
  <dispName>Tome of the Touch</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/base_talents/vampiric_touch_inv.gif</invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <cost>90532</cost>
  <unique/>
  <activate type="melee">
    <effect type="deplete" name="mana" value="62"/>
    <effect type="restore" name="health" value="50" variation="50" applyTo="self"/>
    <effect type="sfx" name="life_tap"/>
  </activate>
</item>

<item>
  <name>sos_polymorph</name>
  <dispName>Sheeping Trinket</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_025_inv.gif</invImage>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate castTime="800">
    <effect type="deplete" name="mana" value="180"/>
    <effect type="projectile" name="big_bad_freud_howl" description="Casts a brain damaging wave"/>
  </activate>
</item>
<activate castTime="1200">
  <effect type="projectile" name="sos_polymorph" description="Casts a sheeping spell"/>
  <effect type="deplete" name="mana" value="5"/>
</activate>

<flavor>Only works on certain weak minded individuals.</flavor>

<item>
  <name>summon_sheep</name>
  <dispName>Summon Sheep</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_025_inv.gif</invImage>
  <requirement/>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate castTime="4000">
    <effect type="projectile" name="ass_transform" description="Hurls a mind probing bolt"/>
    <effect type="deplete" name="mana" value="5"/>
  </activate>
  <flavor>This item only works against Mary Daly.</flavor>
</item>

<item>
  <name>ass_daly_transform</name>
  <dispName>Shield of the Mind</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_007_inv.gif</invImage>
  <requirement/>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate castTime="4000">
    <effect type="projectile" name="ass_transform" description="Hurls a mind probing bolt"/>
    <effect type="deplete" name="mana" value="5"/>
  </activate>
  <flavor>This item only works against Mary Daly.</flavor>
</item>

<item>
  <name>ass_marx_transform</name>
  <dispName>Shield of the Mind</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_007_inv.gif</invImage>
  <requirement/>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate castTime="4000">
    <effect type="projectile" name="ass_transform" description="Hurls a mind probing bolt"/>
    <effect type="deplete" name="mana" value="5"/>
  </activate>
  <flavor>This item only works against Mr. Marx.</flavor>
</item>

<item>
  <name>ass_transform_reflect</name>
  <dispName>Chauvinistic Reflection</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_010_inv.gif</invImage>
  <requirement/>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate castTime="10000">
    <effect type="projectile" name="ass_transform_reflect" description="Hurls a mind altering bolt"/>
  </activate>
</item>
<flavor>It's coming right back!</flavor>
</item>
-<item>
  <name>ass_banish</name>
  <dispName>You're Grounded!</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_010_inv.gif</invImage>
  <requirement></requirement>
  <type>trinket</type>
  <rarity>common</rarity>
  -<activate castTime="10000">
    <effect type="projectile" name="ass_banish" description="Hurls a discipline inducing"/>
  </activate>
  <flavor>It's coming right back!</flavor>
</item>
-<item>
  <name>marx_banish_self</name>
  <dispName>Leave me alone!</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_010_inv.gif</invImage>
  <requirement></requirement>
  <type>trinket</type>
  <rarity>common</rarity>
  -<activate castTime="1000">
    <effect type="shield" value="20000" duration="20000" applyTo="self" tint="660066" amount="0.40"/>
    <effect type="sfx" name="shadow_burst"/>
  </activate>
</item>
-<item>
  <name>real_scoop_summon_bastard</name>
  <dispName>Summon Secret Sect Spy</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_025_inv.gif</invImage>
  <requirement></requirement>
  <type>trinket</type>
  <rarity>common</rarity>
  -<activate>
    <effect type="perm_summon" name="real_scoop_bastard" radius="50" applyTo="self"/>
  </activate>
</item>
-<item>
  <name>union_horn</name>
  <dispName>Horn of the Struggle</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_026_inv.gif</invImage>
  <type>quest item</type>
  <rarity>common</rarity>
  -<activate>
    <effect type="summon" name="marx_comrade" radius="250" duration="3000000" applyTo="self"/>
    <effect type="sfx" name="horn"/>
  </activate>
  <flavor>A hammer and sickle symbol was etched on the surface.</flavor>
</item>
-<item>
  <name>summon_freud</name>
</item>
<item><name>summon_robot_chicken</name><dispName>Chicken Summoning Feather</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage><invImage>rsc/img/items/equip/trinket/trinket_001_inv.gif</invImage><requirement>condition type="level" value="3"/></requirement><type>trinket</type><rarity>rare</rarity><cost>8000</cost><unique/>
<activate castTime="1000000">effect type="summon" name="robot_chicken" radius="100" duration="60000" applyTo="self" description="Summons a chicken to fight for you"/>
<effect type="deplete" name="mana" value="20"/>
</activate></item>

− <item><name>summon_daly_veteran</name><dispName>Gyn/Ecology Excerpts</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage><invImage>rsc/img/items/equip/trinket/trinket_021_inv.gif</invImage><requirement>condition type="level" value="3"/></requirement><type>trinket</type><rarity>common</rarity><cost>8000</cost><unique/>
<activate castTime="1000000">effect type="summon" name="daly_veteran" radius="200" duration="60000" applyTo="self"/>
<effect type="deplete" name="mana" value="40"/>
</activate></item>

− <item><name>tome_of_dazzlement</name><dispName>Tome of Dazzling Shadow Effects</dispName><dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage><invImage>rsc/img/items/equip/trinket/trinket_021_inv.gif</invImage><type>trinket</type><rarity>common</rarity><cost>8000</cost><unique/>
<activate>
<effect type="sfx" name="shadow_burst"/>
<effect type="deplete" name="mana" value="5"/>
</activate>
</item>

− <flavor>It does special effects and stuff. That's all there is to this thing. And it costs mana. You know, I can go on and on about how useless this trinket is, but why don't you stop reading this already?</flavor>
</item>
<item>
  <name>daly_confrontation_enrage</name>
  <dispName>Mind Enraging Trinket</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_010_inv.gif</invImage>
  <requirement/>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate>
    <effect type="special" name="enrage_debuff" duration="6000" applyTo="self" description="Enrages target."/>
  </activate>
  <flavor>He's going out of his mind!</flavor>
</item>

<item>
  <name>complete_heal</name>
  <dispName>Haxxor Bandages</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/consume/firstaid_inv.gif</invImage>
  <type>trinket</type>
  <rarity>epic</rarity>
  <activate castTime="1500">
    <effect type="restore" name="health" value="1000000" variation="0" applyTo="self" description="Heal thyself"/>
    <effect type="restore" name="mana" value="1000000" variation="0" applyTo="self" description="Heal thyself"/>
    <effect type="sfx" name="bandage"/>
  </activate>
  <flavor>If only this is available for the arena.</flavor>
</item>

<item>
  <name>bleating_unsheep</name>
  <dispName>Icon of Free Thought</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/misc/wool_inv.gif</invImage>
  <requirement/>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate>
    <effect type="projectile" name="bleating_unsheep" description="Releases mind freeing energy"/>
    <effect type="deplete" name="mana" value="5"/>
  </activate>
</item>

<item>
  <name>summon_marx_convert</name>
  <dispName>Bleat of Freedom</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/misc/wool_inv.gif</invImage>
  <requirement/>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate>
    <effect type="permSummon" name="marx_convert_sw" radius="0"/>
    <sfx name="smoke_splash"/>
  </activate>
</item>

<item>
  <name>bleating_sheep_buff</name>
Wooly of Infinite Potential

Start Signal Totem

Summon Chicken of the Infinite

End Signal Totem
<item>
  <name>holy_fire_totem</name>
  <dispName>Simulated Holy Fire</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_017_inv.gif</invImage>
  <requirement></requirement>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate>
    <effect type="projectile" name="holy_fire_daly" description="Casts a holy fire"/>
  </activate>
</item>

<item>
  <name>guardian_ring_lump</name>
  <dispName>Horn of Socialism</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_026_inv.gif</invImage>
  <type>quest item</type>
  <rarity>common</rarity>
  <activate>
    <effect type="summon" name="marx_warrior" radius="250" duration="300000" applyTo="self"/>
    <effect type="sfx" name="horn"/>
  </activate>
</item>

<item>
  <name>guardian_ring_phal</name>
  <dispName>Flute of Feminism</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_027_inv.gif</invImage>
  <type>quest item</type>
  <rarity>common</rarity>
  <activate>
    <effect type="summon" name="daly_warrior" radius="250" duration="300000" applyTo="self"/>
    <effect type="sfx" name="horn"/>
  </activate>
</item>

<!--
items with attributes unused by the current version of the game
-->

<item>
  <name>hearth_stone</name>
  <dispName>Hearth Stone</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_022_inv.gif</invImage>
  <requirement></requirement>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate>
    <effect type="teleport" name="zone_ef" value="portal"/>
  </activate>
</item>

<item>
  <name>chaos_stone</name>
  <dispName>Chaos Stone</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_022_inv.gif</invImage>
  <requirement></requirement>
  <type>trinket</type>
  <rarity>common</rarity>
  <activate>
  </activate>
</item>
<type>trinket</type>
<rarity>common</rarity>
- <activate>
  <effect type="change_variable" name="evil_meter" value="1"/>
</activate>
</item>
- <item>
  <name>boost_relic</name>
  <dispName>Relic of Boosting</dispName>
  <dropImage>rsc/img/items/equip/misc/bag_item.gif</dropImage>
  <invImage>rsc/img/items/equip/trinket/trinket_022_inv.gif</invImage>
  <requirement>
    <type>relic</type>
    <rarity>common</rarity>
    <runSpeed>50</runSpeed>
    <jump>25</jump>
    <haste>50</haste>
    <spellHaste>50</spellHaste>
    <spellBoost>50</spellBoost>
  </requirement>
</item>
</itemList>
Early experiences with the Red 5 open source Flash media server
AN OPEN SOURCE, FLASH MEDIA SERVER

Yuzo Kanomata
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Why look for an Alternative

- Allows for rich interactive Media Applications
  - Worldwide Ubiquity of Adobe Flash Player 9—Mature Markets 97.2% (March 2008)
  - But costly license
    - Flash Media Interactive Server (US $4,500*)
- Red5, an Open Source Alternative
  - Has been embedded in commercial products e.g., SmartFox
  - Active developer Community
  - Clustering possibility
- Load tests to start evaluation of Red5
  - Flash-based, in browser A/V with text chat
  - Flash-based Video Stream tests
Flash-based AS2 Client Results

- 2 client load – server (low)
- 10 client load – server (mod)
- Higher loads TBD (est 100+)
- Higher CPU usage than FMS
- May reach Server RAM memory problems due to underlying Java implementation
- Most trans-coding pushed to the edges (clients) in A/V conference app — increases demands on client CPU (30% in MacBook 2.4 Core 2 Duo)
Moving to Flex3/AS3 Client Dev

- Flex3 – and Eclipse-based IDE for AS3
  - Supports an Actionscript 3 O-O paradigm
    - Older Flash and Flex 2 and Flash use AS2 (semi O-O)
  - AS3 a large departure from AS2
    - Event model changed
    - Call-back model changed
    - Keyword changes e.g. Void becomes void
  - Less Open-Source code available
- 3 clients developed
  - Viewer, Recorder, Teleconference
FLV Video Player

- Displays a stored FLV file from a listing provided by the App
  - Client CPU usage 8% stopped, 26% small movie trailer, 60% large movie trailer, 30% recorded stream (Server CPU < 1%)
Simple Stream Recorder

- Stores Video Stream – can be accessed by the Viewer
  - Client CPU 18% camera only, 50% when stream is sent/recorded
Teleconference App – no fixed user limit

- Client CPU usage: 48% for 2-user, 52% for 3-user
- Camera Stream output quality set low (~16 kbps)
Red5 Server

Advantages

- Free and Open Source (GPL)
- Can make custom Server Apps or existing/included Red5 Demo Apps

Disadvantages

- Server Apps in Java, so FMS to Red5 migration is non-trivial
  - E.g., main.asc -> Application.java
- May have inherent Java limitations
- Bare-bones approach, so many services are up to you to develop and deploy e.g., server load balancing
- Documentation sketchy when dealing with steams
Client App building

- Flash 9 (AS2)
  - Advantages
    - Many (free) client applications out there
    - Seems to make for more efficient clients
  - Disadvantages
    - Adobe seems to be phasing out AS2
    - Difficult programming in the Flash 9 environment for most developers
Client App Building

- **Flex3**
  - **Advantages**
    - Actionscript 3 support in the Eclipse IDE
    - IDE applies static syntax checks on Save.
    - Debug environment directly built in
  - **Disadvantages**
    - Seems to build less efficient client apps
      - Teleconf test clients ~30% CPU on Flash 9 vs ~48% on Flex3 swf files for similar applications
    - Subtle compiler settings may have larger effects
      - E.g., enabling reading of a xml config file requires a specific compiler option to be set
Client/Server Debugging

- The entire Application is based on an integration between Server provided services and Client interactions.
- Some Services are inherent in the Server and so are not stated in documentation
  - E.g., onBWDone callback (client), netstream record mode (server)
  - Unless a debugging Flash Player is used, the Application will exhibit erroneous behavior.
- Hard to debug client/server interaction.
Red5 Application Outlook

- Out-of-box, simple Apps that can be used directly
  - New clients can take advantage of demo service with no reprogramming on the Server
  - Low server load for small-group usage

- New Services and capabilities require development effort on both client and server ends

- Some Services available from other parties for Free
Game modding as a way to develop serious games for industrial applications
Modeling and Navigating a Simulated Semiconductor Fabrication Laboratory using a Action-Oriented, Multiplayer Game Engine

Preliminary Report

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March 2008
Purpose:

The purpose of this system is to assist in the identification of spilled puddles of liquid in microchip, semiconductor, or nanotechnology device manufacturing plants (FabLabs). This is an important problem to solve because while some puddles in the plant may be relatively harmless (leaking water from a fire sprinkler pipe), others may be potential biohazards (any of the over sixty dangerous acids, solvents, caustics, etc.). This danger means that any puddle not immediately recognized must be treated as a potential biohazard. This may cause the FabLab to be closed down until a cleanup team can determine the puddle’s origin, composition, and means for remediation. This may result in a shut down of the FabLab down for the remainder of the day, resulting in monetary loss for the company that owns and operates the FabLab. Being able to determine the composition of a liquid spill without shutting down the plant and waiting for a cleanup intervention effectively increases the daily utilization and productivity of the FabLab.

Features:

Background

We have used the *UnrealEd 2.0* to recreate a microchip manufacturing plant. UnrealEd is a software development kit (SDK) and content development or modification environment for the Unreal 2.0 Game Engine (circa 2004). The Unreal Tournament 2004 game engine (packaged with the *Unreal Tournament 2004* game that retails for $30 or less) allows the user to construct/import, navigate, and interact with object located within a FabLab, as well as with in-FabLab characters, that are also visually
modeled and assigned behavioral capabilities (via character animation scripts) via a custom character model (for example, a manufacturing technician wearing a “bunny suit”). Although FabLab objects and textures for their visual appearance can be modeled using the UnrealEd SDK, it is often more productive to use a more capable computer-aided design (CAD) modeling package like Discreet 3DStudio to model constructed objects and characters. In our efforts below, 3DStudio is used to create different FabLab objects, which are then placed into a FabLab layout using UnrealEd.

**Models**

We first start with an overview of some of the objects that have been modeled. The following screenshot depicts the modeling and texturing of an object used to depict a scanning electron microscope.

One overall goal of our effort is to model, texture, and display the following FabLab facilities and possible spill dangers:

- FabLab manufacturing equipment, machines or devices
- Pipes (sprinkler, coolants, etc)
- Robotic carriage tracks
- Human ignorance
In what follows, we focus just on the first of these items.

Many of the models used will be either from the standard UnrealEd package, or are created by using the built-in CSG geometry and texturing them with standard textures. The rest of the models will be created custom using 3DStudio Max 7. The model shown above was created with 3DStudio Max.

The virtual FabLab we have created uses the following equipment models, whose images are taken from the UCI Integrated Nanosystems Research Facility website.

Quintel Aligner
The system can be modified to recreate any FabLab layout and portray any set of machinery that can be modeled as 3D objects. Actual engineering design models of a device or piece of equipment would enable the modeled object to be (a) disassembled/reassembled for service purposes by adding an corresponding disassembly/assembly animation script coded in UnrealScript, or (b) functional or behavioral simulation (using an external simulation package). The system could easily be modified to function for other manufacturing plants.

Beyond this, if actual 3D CAD models of FabLab devices were made available to us (in a standard data exchange format that UnrealEd can import), then we would be able to model not only the external appearance of devices, but also their internal subsystems. For example, if the scanning electron microscope incorporated a subsystem that was separately model, that subsystem model could be included within the FabLab 3D device model like those we have created. It should further be possible to also animate the subsystem's disassembly/reassembly, for instance, in response to a device service request or device fault detection.
Moving forward in the FabLab modeling process, the following screenshot depicts work in progress in the placement of equipment and overall layout of the FabLab using UnrealEd.
The next screenshot now displays an overall perspective view of the FabLab situated within a larger surrounding hallway, to suggest its location within a larger building.
Walkthrough

At this point, we turn to provide a series of images that depict an interactive navigational walkthrough of the FabLab that we have modeled, using the facility devices identified above. We start from a location (or viewpoint) in the hallway a larger facility as we approach the FabLab.

From the hallway, we see the FabLab has windows that allow for a hallway-based view of activities or circumstances within the FabLab.

Information indicated at the top and bottom of the screenshot, and those that follow, are extraneous items from the Unreal game, unrelated to our demonstration. However, the countdown timer in the upper-right corner may be of value in the context of time-limited problem-solving tasks.
Next, we move away from the window and around the hall to see the door entrance to the Fablab (grey vertical doors).
Now facing the door to enter the FabLab from the hallway, as shown below.
The outer door to the FabLab opens, reveals an interlock room where a cleanroom bodysuit ("bunny suit") is acquired.
Inside the interlock room, facing the inner door to the FabLab.
FabLab worker (as a fully articulated, user controlled character/avatar) wearing a clean room body suit, shown next.
Preparing to enter the FabLab in a clean room body suit.
Inside the Fablab, noting windows into hallway in the distance, and semiconductor fabrication facilities nearby. The room color (or background illumination) results from an attempt to replicate the color-safe lighting used in a FabLab.
The Spill Squirtgun

As part of a training regimen for teaching workers how to safely diagnose a liquid spill in the FabLab, the trainer/worker is provided with a virtual device that enables her to place a liquid spill anywhere in the FabLab where such a liquid spill might occur. Spills are placed using a specially designed and programmed "spill gun" (the Squirtgun). When the trainer/worker fires the Squirtgun, it places a spill puddle wherever the reticle is aimed.

The Squirtgun (shown in the lower right corner of the screenshot above) has a simple targeting reticle, and no recoil when fired. On impact, the puddle uses its location to calculate the most likely composition a puddle in that location would have, and displays this information.
A limited number (to be determined at a later time) of puddles may be placed at once; when the limit is reached, the oldest puddle (and all its information) will disappear.
How to use:

The system is very easy to use, as all that the trainer is required to do is place a puddle. The user navigates through the plant, using standard Unreal Tournament 2004 movement ("W-A-S-D" keystrokes to move forward, left, back, right, and mouse click to look), and fires the Squirtgun (left mouse button) to place a puddle in an appropriate spot.

The spill puddle will appear where the Squirtgun is aimed, and will display the three most likely compositions of the puddle. If there are fewer than three possible composition/source pairs, then the one or two possible will be displayed, leaving the third space blank. If there is no possible composition/source pair for a puddle’s location, the puddle will display the message "No composition or source found".
Preparing to place/shot a spill on a piece of FabLab equipment, in order to help determine what kinds of known liquids might be associated with a particular piece of equipment, given its overall 3D location within the FabLab. Note, some equipment might not normally have spills associated with their operation, but such devices might have another unrelated liquid spilled on them (e.g., from a nearby “leaky” device, or from some remote source, such as overhead plumbing).

End of walkthrough.