

Game Production Lifecycle for the RealArcade System

By RealNetworks®

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Introduction



What is RealArcade?

RealArcade is a game management system and virtual game console that enhances the experience of playing PC games and acquiring new ones. When a user launches RealArcade, it automatically finds all the PC games installed on the system and offers the following capabilities:

- Easily browse and manage your PC game collection.
- Install, organize, launch, and uninstall your downloadable games.
- Conveniently organize, launch, and uninstall your CDROM titles.
- Find opponents to play against over the Internet using RealArcade's chat services, game lobbies, and synchronized game launch.
- Get helpful information about the games you own using RealArcade's links to game news, fan sites, game instructions and shortcuts, Hints & Tips, Cheats, technical support, game patches, and related genre sites (i.e. action, role-play, strategy, etc).
- Participate in the gaming community through game ratings and message boards.
- Find, download, and buy more of the hottest downloadable games using RealArcade's download management tool that makes downloading games simpler and more reliable.
- A leg up in the rush to capitalize on electronic software distribution for game software (and a big partner).

How can it benefit you?

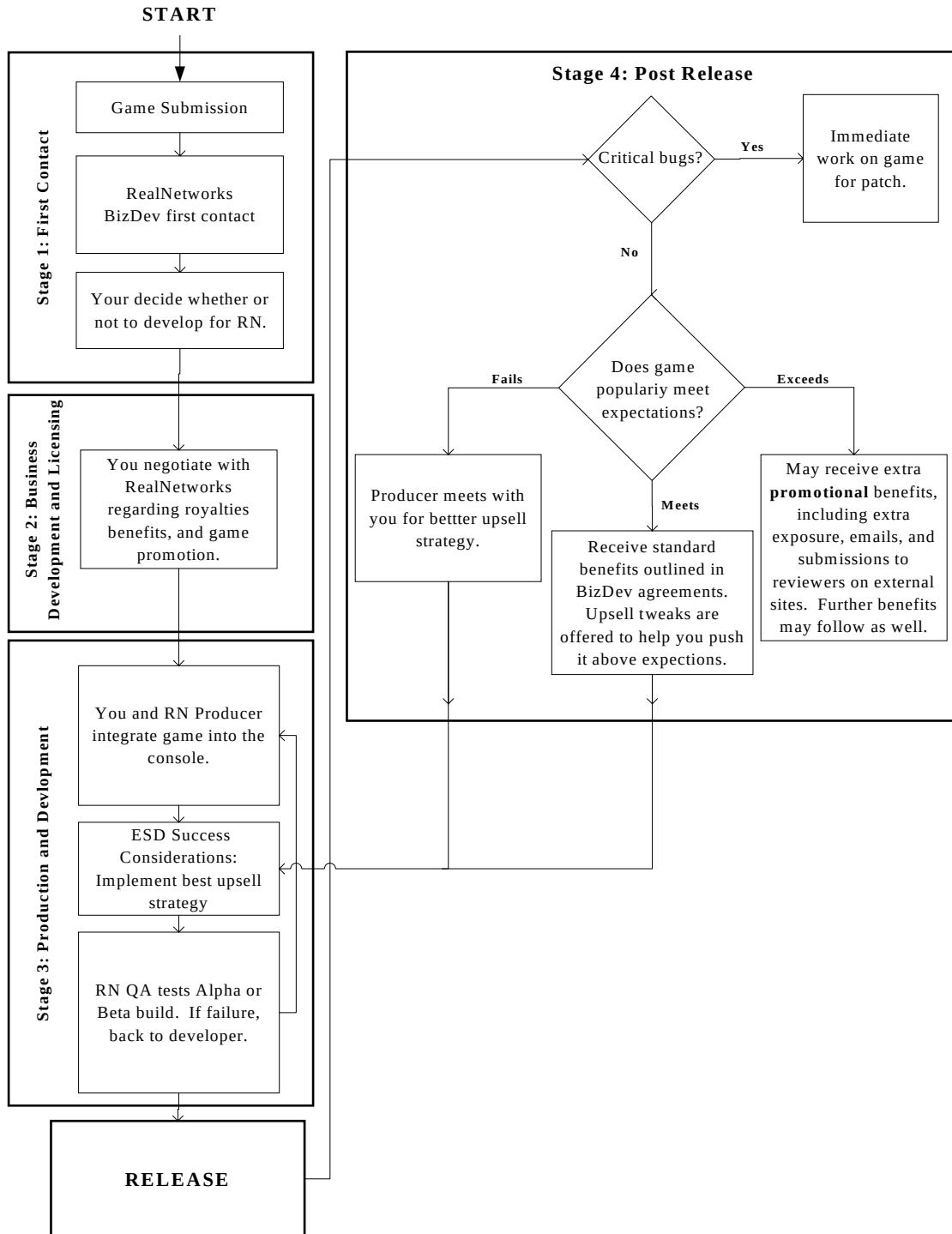
Along with benefiting the end user, developing for RealNetworks avails you a completely new channel of revenue and promotion that you won't find with any other platform. Following are just some of the benefits we offer:

- Distribution channel and promotional benefits, with over 130 million users registered in RealNetwork's database.
- Offers great promotional opportunities in the RealArcade GameGuide and as a featured catalog game.
- Smaller download size when using the RN installer and the XZIP compression and packaging technology.

- Easy and consistent patching and game updates. Games can support AutoUpdating when using the RN installer.
- Handles the download and installation of the game seamlessly, causing less confusion for the user, and removes the problem of forgetting where your game was downloaded to or installed.
- Handles multi-player matching and synchronized game launch for peer-to-peer games.
- Ensures that the user has the proper LithTech engine and DirectX versions and that system resource availability (e.g. CPU, memory, screen resolutions, etc.) is correct to ensure optimum game performance.
- Brings all the relevant info about your game into one place, including websites, game manuals, READMEs, support information, etc.
- Includes the LithTech 3D gaming engine so that LithTech game downloads can be smaller.
- Digital Rights Management technology, which protects your game from being pirated. (Under investigation for Beta 2.)
- Finally, we offer a special deal on purchasing a license for the LithTech engine. For specific details, speak with your BizDev representative.

Game Production Lifecycle

There are four main stages of the game production lifecycle. See the following page for a complete diagram.

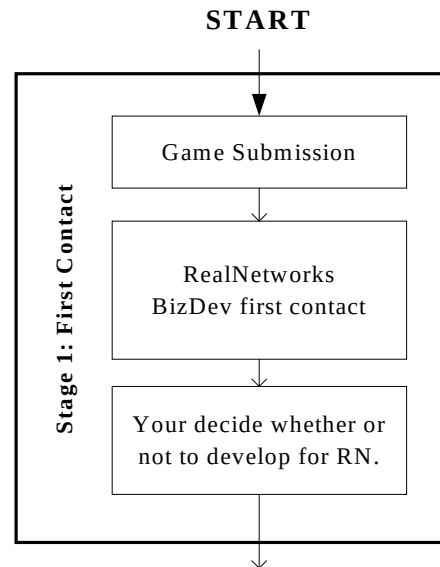


This document will outline each of these stages, as well as provide all the necessary technical information in the Appendix. We have also provided a glossary in *Appendix E: Glossary*, page 60. We recommend you glance over this section, as it will help you to understand certain technical terms mentioned throughout this document.

Stage 1: First Contact

Up to this point, you have submitted your game to RN, a RealNetworks Biz/Dev representative has contacted you, and you are now deciding whether you want to develop for RN's RealArcade. Perhaps you've already signed a deal with us. In either case, we know that the relationship will be mutually beneficial. The "Getting Started" document you first received outlines just a few of the benefits we offer all of partners of RealNetworks.

If you have any questions or issues that you need addressed before signing a deal with RealNetworks, such as royalties or benefits, we encourage you to read the next section, Stage 2, regarding the promotional benefits of your game.

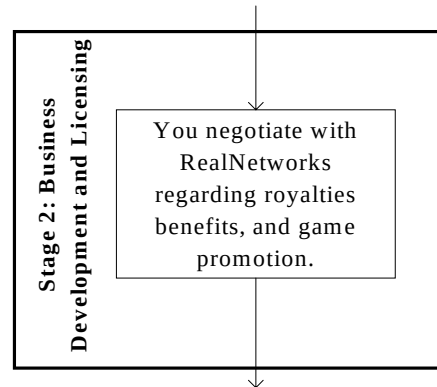


Stage 2: Business Development and Licensing

Before any software is published, you will come to a business agreement with RealNetworks regarding the electronic software distribution (ESD) of your game. This phase of the lifecycle involves you and RealNetworks discussing everything from benefits, to royalties, to contractual agreements.

It is important for the Publisher or Developer to understand how this relationship will work for the betterment of both parties. The BizDev group is here to help you in the following ways:

- Key contact point for the initial and subsequent business issues.
- Work out business terms and all contracts for revenue sharing, and game licensing/distribution.
- Manage the relationship at the highest level.
- Directs you to appropriate contacts in production, program management, technical support, and finance (if applicable).
- Works with you to finalize distribution agreements.
- Clarify all documentation, and works to make the process better for all.



Legal Considerations

It needs to be understood that we are not taking ownership of your responsibility regarding copyright, content, or licensing issues. **If your game creates any legal entanglements, you will be held responsible, and your game may be dropped as an RN title.** We encourage you to consider your own legal representation when reviewing any contractual information, as well as reviewing intellectual property rights.

Also, bear in mind that the items below are simply issues to think about regarding your game. These are not guidelines, nor are they an exhaustive list of all the possible legal issues you need to consider. We've simply listed the few issues below as a helpful aid to you, the developer. Again, all legal representation for the developer is completely at the developer's discretion. RealNetworks represents only RealNetworks.

Licensing Considerations

Here are some considerations when pursuing an ESD license through Real:

- Your game is your intellectual property, and it is up to you to protect it (through trademarks and other protection).
- Seek out competent legal assistance if you have any questions about protecting your intellectual property.
- Make sure you have researched the name of your game, the style, etc., for any potential trademark infringement, or other copyright issues.
- Make sure you have not used anything in the game that is not yours to use (i.e. music, images, etc).
- We will ask you to indemnify RealNetworks. If any kind of legal issue should arise surrounding your title, you will be responsible for any damages suffered by RN, and responsible for handling the situation in its entirety.

COPPA compliance

All RealPartners must also adhere to all COPPA regulations. Note that a developer's adherence to RN's privacy policy does not, de facto, mean those COPPA regulations are being adhered to properly. Consequently, all games will be evaluated for COPPA adherence, especially if those games are oriented for children. COPPA (Children's Online Privacy Protection Act) governs what information can be gathered from children under the age of 13. A standard method for adherence to COPPA regulations is to disable information tracking for those who indicate they are under 13 years of age. For a recent update on COPPA compliance, please go to <http://www.ftc.gov/opa/1999/9910/childfinal.htm>. For complete information on COPPA compliance, please go to <http://coppa.org/>.

Privacy Protection

RealNetworks wants to make sure that the user knows that they are dealing with a third party product and is aware of all of the data collection elements surrounding that product. Consequently, all titles will go through a formal privacy review. The rules for privacy follow these basic guidelines:

- If any private customer information is gathered from the user, and this information is not passed to RealNetworks, the developer/sponsor must make it very clear that the information is solely governed by the privacy policy of that developer/sponsor, and is in no way protected by the RealNetworks privacy policy, nor is the maintenance or control of the data supervised by RealNetworks. This must be made clear to the user.
- If any private customer information is given to RealNetworks in any way, RN will have to review the privacy policy for that game or site. Most likely, that game or site will need to adhere to RealNetworks privacy policy, which can be accessed from RN's main website: <http://www.real.com/>. The user must be informed what and how much information is being passed to RealNetworks, and what is being passed to the developer/sponsor.

Here are some issues that are covered under RealNetworks privacy policy:

- Data Transmission
- Personal Information (including GUID)
- Storage and Logging of Data
- Use of Data
- Use of Encryption
- Info Sent to User
- Use of Cookies
- Email Addresses (i.e. collection, usage, and option to unsubscribe)
- User Experience (i.e. Is any user-info gathered in a clandestine way? Is everything aboveboard?)
- Privacy Policy (obtainable by user)

For specific guidelines on RN's Privacy Policy, please contact your RN Producer.

Terms of Console Participation

The following is a brief list of some of the terms for participating with the RealArcade console.

- RealNetworks reserves the right to pull any product, at any time, for any reason.
- RealNetworks reserves the right to set pricing.
- If the product is pulled from distribution, outstanding e-commerce booked by RN is subject to the terms of the license agreement.

Disclaimer

Please note that every business agreement is different. Nothing stated in this manual is legally binding for either party, and various aspects may differ from the stipulations in your contract with RealNetworks. **Where there is a discrepancy between your contract and this manual, your contract always takes precedence.**

Licensing Options

The most important variable when deciding how to license through us is determining if you want to have an **exclusive** distribution or a **standard** distribution with us. An exclusive distribution means that your game will be sold exclusively through RealArcade. You may not sell the game through any other outlet. With a standard agreement, you may also distribute the game through other channels. While this may offer you more freedom in marketing your product yourself, it limits severely limits the promotional benefits through RealNetworks. Exclusive titles receive much better promotional benefits immediately upon release, and all top converting games receive the highest promotional exposure. A **top-converting** game is not something you can choose in advance as it can only be merited through game sales or high conversion rates. Whether you started out as exclusive or standard, if your game exceeds expectations for conversion, RealNetworks may offer extra promotional benefits as well.

Benefits for Standard, Exclusive, and Top Converting Games

Below we have outlined the some of the benefits you may receive for exclusive vs. standard titles. We've also outlined benefits for a title that is overwhelmingly successful after it's initial launch. Initial success will be determined after 2 to 4 weeks from release. The success of the game will be reviewed again every week after that. Thus, the review process is really an ongoing procedure. Success is based primarily on conversion rates of free to full version, but also on total downloads, overall revenues, consumer popularity, and user reviews. Keep in mind that **you can reap the benefits of a top converting game whether you started out as a standard or an exclusive title.** If your title's conversion rate exceeds expectations, we will increase your benefits. (Note: The promotional and marketing benefits are subject to change at any time by RealNetworks.)

Promotion and Marketing Benefit	Non-Exclusive	Exclusive	Top Converting
Genre "Featured Game"	2 weeks	4 weeks	(At least) 4 weeks
Games base email "Featured Game" (All users who receive games news via email will receive a promotion for your game.)	X	X	X
Game featured, distributed, and sold in the Game Catalog	X	X	X
Streaming Preview created for your game	X	X	X
User ratings and reviews set up for your game	X	X	X
Slotting in "more games" in appropriate genre	X	X	X
Acceptance testing paid for by RealNetworks	X	X	X
Useful game info and links to developer game sites via Game Profile Data. (For more info on Game Profile Data, see <i>Game Profile Data</i> on page 46.)	X	X	X
RealArcade automatically finds your game on a user's system via Game Profile Data. (For more info on Game Profile Data, see <i>Game Profile Data</i> on page 46.)	X	X	X
Included in RealPlayer Games Channel	X	X	X
Dedicated RN Producer	X	X	X
Community discussion offered as part of general Genre category in game message boards.	X	X	X
Game gets its own category in the game message boards.		X	X

Featured on front page of Real.Com (RN's site is the third most hit site on the Internet.)		X	X
Greatest promotional focus and visibility through the console, in emails, and in product messaging. (Easiest to notice and access.)		X	X
Most favorable licensing and royalty terms.		X	X
Favorable bundling options with RealNetworks' products.		X	X
Distribution license for LithTech engine made available.		X	X
Available as part of games subscription		X	X
Developer logo appears in game catalog		X	X
Submission to top 5download sites		X	X
Search Engine Submission		X	X
Games home page feature (The Games home page gives general news about games, new releases, sneak previews and other general info.)		2 weeks	(At least) 2 weeks
Download Games home page feature (The Download Games page gives user's direct download links to get games.)		X	X
Editorial Review written and featured		X	X
Matching Marketing Funds		X	X
"Take5" Feature to all RealPlayer users. (Take5 is the e-magazine that regularly features the latest news and entertainment for the RealPlayer user base.)			X
RealGuide home page feature			X
Featured in RealPlayer base email			X
Featured in RealPlayer message window (For those interested in RealPlayer's Game News Flashes, they will receive a new-game alert as soon as they log onto the Internet.)			X
Submission to reviewers on external sites			X
Submission of future releases (or patches) to download sites again			X

Royalties and Benefits

Here is what to expect after all contracts have been finalized:

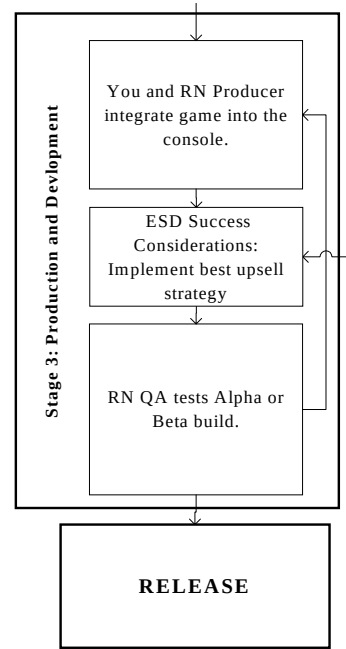
- RealNetworks will distribute the title, and provide support per the type of distribution agreement (featured or non-featured) you have signed with RealNetworks.
- Expect monthly, net 45-day payments for royalties.
- RealNetworks finance will provide a monthly statement indicating the number of games purchased, and the royalty for that month (as well as a check). Advertising revenues will be paid out quarterly, net 45 days, and will include a statement from RN finance.
- Developers may contact RN again and repeat the process if necessary to get new products into the system.

The method with which we compute royalties will completely depend on each individual contract. As we stated in the *Legal Considerations* section on page 10, only your personal contract with RN is binding. Any royalties and benefits mentioned in this manual are examples of what some developers may receive. Other benefits may not be mentioned in this manual, and conversely not all developers will receive all the benefits mentioned herein. For more information, speak with your RN BizDev representative.

Stage 3: Production and Development

Once you've finalized contractual issues with your BizDev contact, we will continue to work with you via your RN Producer. Your Producer should be your **primary point of contact** for understanding the process, questions, issues, etc. The Producer's primary job is one of communication between all the parties involved in the successful launch of a new game, making sure that everyone has access to the correct information so that every person is working together towards the same goal of shipping great games. Your RN Producer will help you understand what you must do to integrate your game into RealArcade, as well as how to implement the best upsell strategy. Furthermore, this liaison will explain what the expectations are from you and from RealNetworks with respect to quality assurance, and how RealNetworks plans its release. To do this, the Producer will perform the following tasks:

- Play and evaluate incoming game submissions and milestone deliverables.
- Serve as the primary point of contact between the game developer and RealNetworks. The Producer will start this role from the point the distribution agreement is finalized, and continue through release and beyond.
- Track progress of game development so that he can correctly "slot" game titles in the appropriate release windows, and deliver final, releasable bits on time so the product can be released.
- Gather and provide feedback into the design and execution of a game as information for a developer to consider towards improving the final product.
- Maintain awareness of events and projects at RN that might impact the release of a game or be beneficial to the development of a game so that this information can be communicated and acted upon. This might include large promotions, e-commerce work schedule, internal development related to games.
- Provide developers access to tools, information, including relevant production and API manuals, and other materials that are necessary for successful completion and launch of a game.
- Coordinate RN resources to ensure support for the game development and launch effort (such as QA testers, web designers, copy editors, marketing/promotion, networking and internet services, etc.)
- Provide input as necessary and appropriate into product design, upsell messaging and proposition, game content, minimum feature set, and other aspects of the title with the intent to maximize market appeal, game download rate, and free/full conversion rate.
- Ensure that all production requirements are clear, and any questions are answered.
- Ensure that work is scheduled into various milestones (if applicable) for the game production schedule.
- Offers you your first line of support for RealArcade and API questions or problems.



Pre-Release Project Management

There are many areas your RN Producer will help you through during pre-release. Several of these areas involve slotting your game and releasing it in the proper window of time. In order to release on time, certain milestones must be met prior to release. At each milestone, we will measure how your game meets certain release guidelines. For more information on all the above, please see *Pre-Release Project Management*, page 20.

Technical and Functional Requirements

All games for RealArcade must meet certain technical and functional requirements to be considered ready for release. This section alone makes up the majority of this manual, as it outlines the entire core of the game's integration into the console.

The technical and functional requirements address the following areas:

- Install and uninstall requirements
- Use of Window's registry
- Game launch requirements
- Ecommerce support
- AutoUpdate/Patch requirements
- Game Profile Data
- API function call requirements
- User Experience (Style Guide)
- SDK Info and Documentation.

For more information on all the above, please see *Appendix B: Technical and Functional Requirements*, page 26.

ESD Success Considerations

RealNetworks will promote every game that we sign up in a manner that will ensure a strong start. Continued promotion is based on a combination of popularity and conversion rates to the full version. This section outlines useful things you can do to make your game popular with mainstream gamers as well as how to generate high upsell rates from the free to the paid versions. **For specific advice and considerations, please see *Appendix C: ESD Success Considerations*, page 51.**

Quality Assurance

The RN QA group provides Milestone acceptance and Final acceptance testing for all products prior to release. We will perform additional functional testing around features and functions specific to the RN release of the product in areas such as branding, links, upsell function and messaging, and API integration that are changed specifically at RN's request.

Bugs, if found, are tracked and reported to the developer through the product's assigned RN Producer. The RN QA group is not generally responsible for the full functionality, compatibility, and stability testing of a game title necessary to ensure the overall quality of the product. **This responsibility rests with the developer who is building the title and/or the game's publisher.** RN does maintain quality and stability criteria (verified in the Milestone acceptance and Final acceptance test passes) for every title. We will reject games that do not meet these standards and hold them from release or milestone progression until those criteria are met.

Your RN Producer can, under certain circumstances, coordinate additional game testing for the game at the developer request. There may be additional cost associated with this additional testing, however. Developers should contact their assigned RN Producer if they have questions about this service. For a detailed breakdown of QA responsibilities, timelines, and product testing guidelines, please see *Appendix D: Quality Assurance*, page 55.

Stage 4: Post Release

The product may be out the door, but the lifecycle doesn't end there. We want to do all we can to ensure that your game is a success. Because of the potentiality for critical bugs, **it is vital that the developer be readily available to support the game for the first few weeks after release.** This will allow us to fix any critical bugs, should they appear. This section will give you guidelines on how you can improve your game with patches, fixes, better upsell strategies, or anything else in the post-release stage.

Developer Responsibilities

There are still a few things to tidy up, even if a game as been released and successful. Dealing with the following issues is critical to good customer relations, as well as business relations between the Producer and Developer.

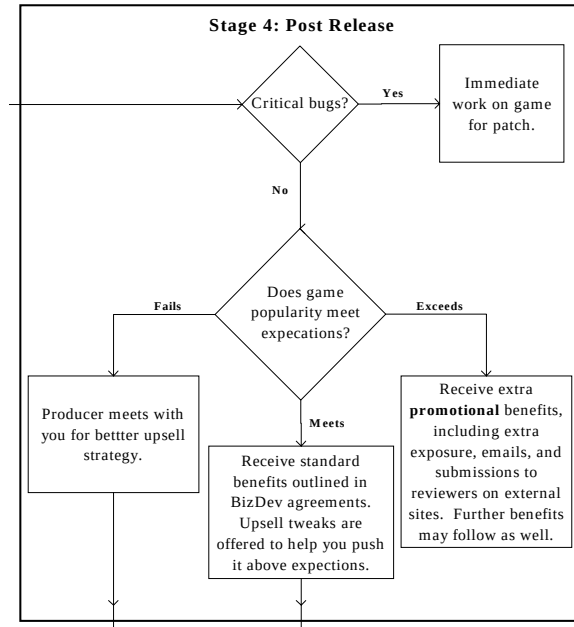
Bug Fixes

It is the developer's responsibility to fix critical bugs ASAP to help ensure a high quality experience for all customers, even if those bugs are not identified until after the product is released to consumers. It is the RN Producer's responsibility to identify, track, prioritize, and communicate such issues to the developer post-release – as well as coordinate and manage the process of getting the bug fixed and new game versions posted. The Producer will keep in contact with RN's support staff as well as other RN associates for rooting out these problems. When a bug is found that requires a new version of the game, the following process will ensure that the game is updated with fixes as soon as possible.

- 1) A potential bug is identified as needing a critical fix. The RN Producer will research and isolate the bug along with RN's in-house QA and customer support staff.
- 2) We will forward a bug report to the developer with a request to fix and will discuss with the developer the best timing and fix approach.
- 3) RN will review any other change requests or outstanding issues.
- 4) Depending on the bug's severity, the developer will submit a new version of the entire game (Free and Full versions) to the Producer via the normal method for submission of new builds.
- 5) The Producer will organize and direct QA resources to confirm changes and fixes, test changed areas for new bugs, and re-run final acceptance and release tests.
- 6) The Producer will submit the changed bits to e-commerce and web teams to update the hosted bits and notify the developer when the new bits are live.
- 7) The Producer will work to ensure that existing users are notified of the availability of the fix, if necessary.

Generally speaking, patches to existing products are NOT created. Rather, a new version of the whole game is provided for download. There may be special circumstances in which a patch is necessary. In that case, RN will institute special procedures to support acquisition of the patch, incorporation of the patch into RN's AutoUpdate servers (if appropriate), and notification of existing users who could benefit from the patch. Note that AutoUpdate is only available for LithTech games, or for games that use the RN installer.

If the bug is bad enough, the old version of the game may be pulled from distribution until a fixed version of the game can be made available for download. In the unfortunate event that the problem is severe, your RN Producer has the discretion to pull a game from promotion.



Upsell Optimization

Another responsibility of your Producer during post release is to monitor the game's success post-launch and ensure that the game is converting to the level that we expect. The conversion rate of a game is one of the key determining factors in the success of a game. A conversion rate refers to the ratio of the number of free version downloads compared to the number of full versions sold. For example, if 1,000 users download your game in 1 week, and 50 decide to purchase the game, then the conversion rate for your game is 5%. Usually, a conversion rate between 3% and 5% is good (although higher is, of course, better). Another statistic is "Dollars-per-Download," which is the total revenue from a game divided by the total free downloads for that game. However, your main goal as a developer is to make a top converting game.

Conversion rates and download rates determine which games receive additional marketing and promotional focus. Driving high traffic and downloads is a big benefit to working with RealNetworks, but since RN's focus is to maximize revenue for each title, we will focus efforts to drive that traffic on products that promise the highest return (i.e. – the best converters).

Your Producer will contact you at 2 weeks, 4 weeks, and 8 weeks post-launch to discuss suggestions on how you might change gameplay to boost conversion rate. He will also work with the marketing, e-commerce, and merchandising staff here at RealNetworks to ensure optimization of conversion rates. Feel free to contact your Producer if you have an idea of how to boost conversion rate (either through game or merchandising/marketing changes).

Increasing Your Conversion Rates

Conversion rates will vary based on a host of parameters, but your Producer will want to work with you and the marketing staff of RealNetworks to ensure that your game is converting at the optimum rate. These are some factors that the Producer may monitor and tweak:

- Free version content (Is it compelling? Does it leave the player wanting more? Do we give away too much?)
- In game and on site Upsell messaging (Are the benefits of buying clearly enumerated? Is the message presented frequently enough?)
- Upsell proposition (Does the benefit of buying outweigh the cost?)
- Market Appeal (Does this game resonate with RN's core audience?)
- Genre Appeal (How does the game do compared to others in the same genre?)
- Competitive Landscape (are there other similar games, and how are they doing?)
- Purchase process and flow (is the purchase process seamless and functioning?)
- Bugs (Are there game bugs that dissuade buyers?)

Surveys of RN's audience has shown that there are two main factors that can hamper your game's conversion rate. For better conversion rates, keep these factors in mind:

- **Don't give away too much in the free version.** The free version is a gameplay DEMO that should give away just enough gameplay to get the player hooked and ready to play. The "right" amount is dependant on the genre your game falls into. For example, demo games that are timed should not have more than ½ to 1 hour of gameplay in the free version. Much more than that and you are giving away too much.
- **Spend more time "reminding" the player of the benefits and method of buying the game.** Many developers believe that players are put off by too much nagging to buy. This has not been shown to be the case. Remember, the free version is just that...free. And we are in the business of selling games. Take every opportunity to put your upsell message in front of your players, keeping a balance of in-context messaging, and straight sales messaging. We have yet to reach a threshold of over-nagging the consumer.

Note: If your game has an excellent advertising/sponsorship model (or alternative way of converting free downloads to profit), the conversion rate may not be as important.

Merchandising Optimization

The e-commerce and merchandising folks here at RN are constantly tweaking and tuning RealArcade's catalog of games, as well as the games site, in order to ensure that it remains fresh and provides promotional focus where it can do the most good. This means several things to game developers after your game has been launched.

- We are constantly evaluating the performance of every game we offer via a variety of stats reporting systems and metrics. If anything is amiss with your game, you will receive a call from your Producer. Also, if you think your game is not performing as it should, contact your Producer and he'll be able to give you some insight as to why and perhaps how to fix the problem.
- The positioning of your title can change on a weekly and even daily basis. If you have any questions or concerns about the positioning of your title, please be sure to approach your Producer with them.
- Games that convert well are moved upwards in visibility while games that are downloading or converting poorly in featured spots are "down-leveled" accordingly until the conversion and/or download rate can be improved.
- As new titles are added, they generally are given featured position during the first several weeks to test the waters and give a new title the exposure needed to generate momentum.
- Positioning and content of outbound marketing (e-mails, for example) are tested before the e-mail goes out to ensure maximum effectiveness of the promotion. The RN Games-base receives 2 emails monthly, larger campaigns are run quarterly.
- All exclusive titles (marketed only through us) receive additional focus for off-site promotion and features on major downloadable software channels other than the Real.com network.

Feature Updates

Updating the features of an existing product is a good way to obtain additional visibility to a game that has been out for a while. This is particularly true if you are adding a major new feature such as online multiplayer support. We are always happy to help breathe new life into an existing title by releasing a new version of a game that provides something new. The process for this is very similar to releasing a new version to fix bugs, only not as time critical.

When you begin building a feature-updated version, let your Producer know and he will put plans in motion to get this new version released and promoted as soon as possible. The new version of the game will need to be slotted for release, and QA tested, in the same manner as a new game.

Extra Promotions

If a title does unusually well, the developer will receive extra promotional benefits. For details, see *Licensing Options*, page 12.

Conclusion

RealNetworks is constantly re-evaluating the RealArcade console for improvements and feature enhancements. Your games, combined with RN's effort, will continue to provide the user with the finest games available for the PC. Furthermore, we know the collective development process will always benefit both parties. If you should have any questions, problems or issues, never hesitate to contact your RN Producer. Lastly, give the testers something to shout about! We look forward to playing with your latest creation.

RealNetworks

The RealArcade Staff

Appendix

The following reference section will help you to build the best games available,
and the best user experience possible with RealArcade.

Appendix A: Pre-Release Project Management

Release Date Slots

New games are launched and made available to consumers monthly. Monthly release gives time for titles to be featured and evaluate performance before a new batch of games arrives. “Slotting” a game refers to deciding which launch window would best suit the game in question. This can be determined by a variety of criteria, namely:

- Titles are (generally) slotted based on the developer’s estimation of completion with input **and** recommendations from RN as to how to maximize the title’s success through proper launch timing.
- Other factors are game genre, the release spread of games in that genre, large promotional opportunities, content, other titles being produced at the same time, and number of titles.
- A general date for a release candidate can (and should) be set as early as possible in the development process. However actual product slotting should not be done until 8-12 weeks prior to completion.
- Products are slotted into specific release dates so that:
 - o There is some predictability to the monthly lineup that each given launch can have the critical mass necessary to be successful.
 - o RN resources for final QA, Marketing, Promotion, Public Relations, E-commerce, Development, Technical Support, etc have time to prepare and coordinate game- and launch-specific tasks.

Release Date Windows

Once a Release Candidate (RC) has been built, it needs to be submitted according to the following schedule:

- RC’s must be received 2 weeks prior to a launch date to be included in that month’s launch.
- RC’s received later than 2 weeks prior to a launch date will be pushed to the next available launch window.

This would probably be the next month’s window, but not always (depends on lineup and availability). Games are almost never released “out of cycle” unless there is a very, very good reason to do so.

RealNetworks releases new titles on the 2nd Wednesday of each month. Preparation and logistic coordination of launch takes approximately 6-8 weeks from the date of game completion. This allows time for final acceptance testing, entry into e-commerce system, collection of Game Profile Data, completion of title-related web and HTML content, and Tech. Support/Customer Service setup. This also gives the developer time to complete the tasks associated with integrating into RealArcade. Thus, a title completed at the beginning of January will likely release in Mid-February.

Contact your assigned RN Producer if you have any questions regarding your release timing. RN’s goal is to work with you to make your title available as quickly as possible without unduly compromising quality or service.

Hitting/Missing Release Dates

Whichever launch date you choose is not as important as whether you hit your launch date or not. The developer should set release dates according to the needs of the development cycle. Development is inherently unpredictable, and so projected release dates do change. However, once you have committed to a launch date, RealNetworks will commit resources to that course of action. Consequently, the developer should make every effort to follow through. You should make sure you have allotted enough time to complete the technical requirements listed in *Appendix B: Technical and Functional Requirements*.

If you feel that the schedule is sufficiently crunched, or development has significant problems **8-12 weeks** from a scheduled launch date – you should notify his RN Producer **IMMEDIATELY** so that they can discuss options. If uncertainty remains about launching on time, it is likely not going to be done on time. You should contact your RN producer to make a contingency plan.

It is better to delay release 4 weeks at 8 weeks prior to launch, than to delay 1 day at 1 week prior to launch.

So, what if, despite all plans to the contrary, a release date is blown? What happens then? Well, first, your Producer will swear a lot. Then, your Producer will calm down and meet with the developer and RN staff to evaluate the options:

- **Move the launch date** – In the case where there is some movement in the launch date, a new launch date will be set and development will continue towards the new date.
- **Push the product to a new launch date and try to find another product to fill the hole** – In the case where the product is pushed to a new launch date, the Producer will coordinate with RN and Developer staff to decide what is the best alternate launch date.
- **Drop the product entirely** – In the rare instance where there is not a suitable alternative launch date, the developer will be informed that the product will not be launched through RN and alternative distribution plans will need to be discussed.

Please be aware that while we do not have manufacturing windows, pre-order, and retail shelf space issues such as in the retail games CD market, hitting your launch dates is still important. A great deal of game-specific effort is put forth for any new games launch, and missing your date leaves a hole that we may not be able to fill (and a lot of wasted effort). Missing launch dates consistently, or not communicating with your Producer that launch dates might be missed, is a sure way to sour your relationship with RN as it puts many people in awkward positions.

To Summarize:

- Working towards a completion date does not necessarily mean commitment to a launch date.
- Commit to a launch date 8-12 weeks prior to that date, and stick to it. Product should be as least feature complete by the time you make any predictions about a launch date.
- 8 weeks prior to the launch date, you must evaluate your launch date and likelihood of making delivery of finished goods in time. If you need to push, this is the time to do so. If you do not push, you are committed to that release date and efforts will begin under the assumption you will deliver.
- An RC build is due 2 weeks prior to the launch date. An RC candidate means that it has been fully tested, and no bugs exist that RealNetworks doesn't already know about.
- Don't forget to factor in the technical and functional requirements of integrating in RealArcade.
- If something goes horribly wrong, or even if you are just concerned about your ability to launch on time – **immediately** contact your RN Producer.
- Missing your launch date can result in losing the opportunity to distribute your game through RealNetworks.

Standard Milestone Definitions

A milestone is basically a deadline whereby certain facets of the product must be complete and functional. These “standard” definitions are a bit malleable, and provide only a baseline for detailed discussion. Keep in mind that these milestones are tailored for each specific game. Below, we have spelled out deliverable features and functions for each milestone.

Pre-Alpha (Production) Milestones

There will be several Production Milestones during the course of development. These milestones are simply progress milestones so we can get a feel for how the game is coming along. The number of pre-alpha deliverables depends on the game and the length of the development cycle. Usually the first pre-alpha build is forwarded when

the very basic functionality of the game is in (so there is something to look at). There usually are not any specific content requirements for these builds as they are for Producer review only.

Alpha Milestone

This is generally the first “real” milestone (pun intended). All major game functions and features should be implemented at this stage, and the game should be fully playable (minus minor features or some media). Instability and bugs are expected, although major blocking crash bugs should be squashed before delivery. All technical requirements (*Appendix B: Technical and Functional Requirements*) and content issues (e.g. COPPA, privacy, etc.) should be addressed by this milestone (or at least an acceptable plan to resolve them prior to release). QA testing begins on this milestone and the testers will begin submitting bugs for development review. Generally speaking, QA will run a milestone acceptance test pass on all features and functions defined to be present at Alpha. Only those features defined in the schedule to be present in the Alpha will be tested. This milestone could be defined as “Feature Complete”, although in most circumstances minor game features will still be added. If features are to be missing from the Alpha build, those features should be clearly spelled out in the milestone definition, otherwise **“Feature Complete” will be assumed.**

Beta Milestone

Sometimes described as “Code Complete”, a Beta Milestone means that **no new code** will be added, and the only code changes that will be made to the game from here forward are to fix bugs. All blocking bugs must be fixed in this delivery so that all features, media, and gameplay elements are accessible. **By this milestone, the game is feature, content, and code complete.** The only effort from Beta forward should be finding and fixing bugs and perhaps adding in final bits of media. Major missing media (art/sound) can disqualify a build from Beta status, unless this was previously spelled out in the milestone definitions for the product.

Release Candidate (RC) Milestone

RC simply means that the build delivered is believed to be releasable barring bugs found during a final test pass. If the final test pass comes out clean, the RC build is released. If a final test pass has a bug, a new RC is created and the test pass starts over. **All known bugs must be resolved before an RC can be delivered, as by definition, a build with unresolved known bugs is not releasable and therefore not an RC build.**

Release-to-Web (RTW) Milestone

The approved RC is finally made available to the public for download and purchase. This is the same date as the launch date. Do not confuse this with the RC Milestone, as testing needs be done before it gets to the RTW Milestone.

Milestone Delivery and Acceptance

The following steps outline what will happen at each milestone.

- 1) Build is compiled and reviewed by the **developer’s testing teams** to ensure that it is sufficiently stable for delivery (smoke testing). Tests should also be run to ensure that the build fulfills all requirements agreed to in earlier discussions regarding milestone definitions. If it does not, but you still wish to deliver the build, notify your RN Producer before uploading the files to discuss.
- 2) **Send us your build** along with the accompanying information and other supporting files. These must be packed into one file using zip or similar utility into a Milestone Delivery Package. The Milestone Delivery Package is uploaded to the FTP server provided by your RN Producer. However, you will not be able to gain access to this server unless you have been given permission, so contact your Producer for access rights. Be sure to send an email to your RN Producer both when you start the upload, as well as after you’ve finished. Remember to put in the email the install instructions, summary of changes from previous build, a list of known bugs, and any design or production documentation that is appropriate. If this is the first official game drop, please also include a filled out copy of the “Game Info” in your zip file. (Also, if

you use your own installer, it is preferred that any build classified as ALPHA or later include an actual installer to install and setup the product correctly.)

- 3) Producer will do a quick once over to determine if all pieces and functions are present, the archive is accessible and extractable, and contact you if it is not. If it passes this quick review, the Producer will disseminate the build and relevant information to the Games QA group for **Milestone Smoke Testing**.
- 4) When the build passes its smoke test, the QA group will begin **Milestone Acceptance Testing** based on the criteria outlined in the agreed-upon Milestone Definition.
- 5) When the build passes its Milestone Acceptance Testing, **your RN Producer will contact you** to let you know that the Milestone was accepted. Furthermore, the Producer will set in motion any actions triggered by this acceptance.
- 6) If appropriate, the QA group will then commence functional and comprehensive testing of the build.

Conforming to Release Guidelines

Prior to release, you will need to address the issues you went over during the initial review. We will work with you on these guidelines so that your game is the best candidate for success. These include:

- 1.) Content Guidelines
- 2.) Privacy Protection
- 3.) COPPA
- 4.) ESRB rating
- 5.) Technical requirements outlined in *Appendix B: Technical and Functional Requirements*.
- 6.) QA Acceptance Testing outlined in *Appendix D: Quality Assurance*.

These areas will be discussed below.

Content Guidelines

The guidelines for content involve three areas: questionable content, branding, and documentation.

Questionable Content

If you can answer “Yes” to any of these questions, you will need to work with your Producer to decide what (if anything) should be done before the Alpha milestone. Remember that the guidelines below are just that... guidelines, and do not necessarily exclude a title for distribution in the RealArcade system.

- Is the free version of your game more than 10MB in size (compressed for download)?
- Does the full version of your game require download of more than 20MB after purchase (stand-alone or additional bits)?
- Does Full Version require previous download of the demo version?
- Has your game previously been available for sale and play on any platform (PC, Mac, or Console)?
- Is your game currently available for sale as a PC CD-ROM or Game Console Cartridge or is it planned to be available on these platforms prior to ESD release?
- If your game carries an ESRB rating, does the game have a rating of Mature or Adults Only?
- Could a user find your game offensive either racially, religiously, ethnically, or otherwise?
- Does your game allow/involve killing of humans or human like characters?
- Is your game exceptionally violent or gory?
- Does your game contain foul language?
- Does your game contain any humanoid nudity or sexually explicit material (graphics, sound, or text)?

Branding

The game must include RealNetworks or RealArcade logos (as appropriate) on the following game screens:

- RealNetworks logo on installer screens with "Distributed by RealNetworks" indicated textually.
- RealNetworks logo in the main menu (and/or opening splash screen) of the game with "Distributed by RealNetworks" indicated textually.
- RealNetworks logo in any graphical upsell messaging.
- RealNetworks logo in "about" box message, if any, with "Distributed by RealNetworks" indicated textually.
- Additional logo branding on other menu and interface screens, or in-game is optional and can be implemented as the developer feels is appropriate.
- All references to RealArcade, RealPlayer, or RealJukebox must contain trademark symbol as supertext.
- No game shall use "Real" or "RealNetworks" in game title without prior written approval. All use of the RealNetworks and RealArcade logos are subject to approval.

Documentation

For guidelines on documentation, please see the *Game Profile Data* section on page 46.

Privacy Protection

RealNetworks wants to make sure that the user knows that they are dealing with a third party product and is aware of all of the data collection elements surrounding that product. Consequently, all titles will go through a formal privacy review that will include Games Biz Dev, Producer, and the RN Privacy group. This review will look at the following:

- The information submitted to the producer from the developer in response to the "RN Privacy Checklist" which you submitted with your original bits for review.
- The privacy policy governing the product and the surrounding resources (developers responsibility)
- The messaging in-game and surround resources that informs the customer of potential privacy issues (such as the collection, storage, and use of personal information).

Note that if no data collection at all is done in the game or related resources, then the review will be very simple (obviously). For games or related resources that do perform some form of consumer data collection here are general requirements:

- If the data is collected by or shared with RealNetworks, then the game and related resources must comply fully with the privacy standard upheld by RN. All data collection, storage, use, and messaging must be treated exactly as if the product was an RN internally developed product.
- If the data is collected by the developer and NOT shared by RN, then this must be clearly conveyed to the consumer before data is collected. The governing privacy policy must be clearly identified and available for review by the consumer. RN will review all data collection mechanisms, messaging, and the privacy policy to render feedback as appropriate.
- In all instances, COPPA guidelines must be followed. (See below for details).
- Any e-mail correspondence sent regarding the game to consumers MUST include an option to unsubscribe from the mailing list (a simple "click here to unsubscribe" and then the consumer is automatically unsubscribe - no redirects to a website to unsubscribe...).

RN may choose not distribute the game if we are not comfortable with the developers treatment of PII or their approach to consumer Informed Consent with respect to Privacy Issues and information.

COPPA

All RealPartners must also adhere to all COPPA regulations. Note that a developer's adherence to RN's privacy policy does not, de facto, mean those COPPA regulations are being adhered to properly. Consequently, RN will evaluate all games for COPPA adherence, especially if those games are oriented for children. COPPA (Children's

Online Privacy Protection Act) governs what information can be gathered from children under the age of 13. A standard method for adherence to COPPA regulations is a simple Yes/No box asking if the user is 13 or over. For a recent update on COPPA compliance, please go to <http://www.ftc.gov/opa/1999/9910/childfinal.htm>. For complete information on COPPA compliance, please go to <http://coppa.org/>. The following information was taken from their site:

The Children's Online Privacy Protection Act (COPPA) was passed by Congress in October 1998, with a requirement that the Federal Trade Commission (FTC) issue and enforce rules concerning children's online privacy. The primary goal of the Act and the Rule is to place parents in control over what information is collected from their children online. The Rule is to place parents in control over what information is collected from their children online. The Rule was designed to be strong, yet flexible, to protect children while recognizing the dynamic nature of the Internet.

The COPPA Rule applies to operators of commercial websites and online services directed to children under 13 that collect personal information from children, and operators of general audience sites with actual knowledge that they are collecting information from children under 13. Those operators must:

- 1) post clear and comprehensive Privacy Policies on the website describing their information practices for children's personal information;
- 2) provide notice to parents, and with limited exceptions, obtain verifiable parental consent before collecting personal information from children;
- 3) give parents the choice to consent to the operator's collection and use of a child's information while prohibiting the operator from disclosing that information to third parties;
- 4) provide parents access to their child's personal information for review and/or have it deleted; give parents the opportunity to prevent further collection or use of the information;
- 5) maintain the confidentiality, security and integrity of information they collect from children.

In addition, the Rule prohibits operators from conditioning a child's participation in an online activity on the child's providing more information than is reasonably necessary to participate in that activity.

ESRB Rating

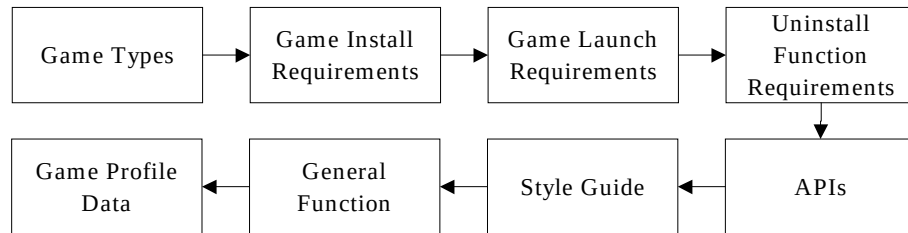
Before releasing a game, RealNetworks requires the game be ESRB rated. The ESRB (Entertainment Software Ratings Board) will rate the content of your game based on its appropriateness for different segments of the population. It is important to note that **RealNetworks will not release any game/site rated for adults only**. For more information about the ESRB, as well as submission information, please go to: <http://www.esrb.org/>.

Appendix B: Technical and Functional Requirements

Overview

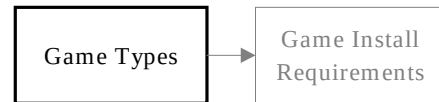
This section is geared for the developers of RealArcade, and contains primarily technical information regarding how the game should integrate with the console. We have broken it down into eight guideline categories. Below, we have illustrated the flow of this section in hopes that this will help you to understand all the factors to consider.

Each of the above sections will be discussed below in the order drawn above.



Game Types

The technical requirements of your game will vary depending on whether your game falls into one of three categories. They are as follows: RN LithTech, RN Non-LithTech (but RN Exclusive), and RN Non-LithTech Non-Exclusive.



RN LithTech Game

A LithTech game is a game that uses the LithTech engine. RealNetworks has a special agreement with LithTech that allows us to offer you a development license for the engine by joining the RealPartner Program as a Level II partner. Approved game developers can distribute their LithTech-based game from RealNetworks. See your RN Producer or BizDev contact for more details.

RN Non-LithTech Exclusive

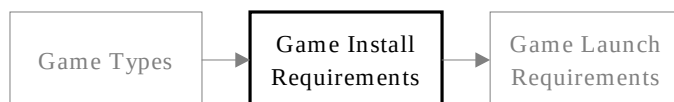
This game does not use LithTech Technology, but is available solely through RealNetworks.

RN Non-LithTech Non-Exclusive

This game does not use LithTech Technology, and is distributed through RN as well as other party outlets.

Game Install Requirements

For any game distributed via RealArcade, there is a basic requirement that it must be launched through the console. This ensures the smooth operation of some critical functions of the console, including proper promotion for your game and its upsell features, system requirements checking, privacy protection, proper access to Game Profile Data, and error free game play. All new exclusive titles will be required to use the RealArcade Game Packager. If your title is older or non-exclusive, we recommend using the game packager, although, it is not required. By using this free utility, you can take advantage of the following benefits:



- Significant reduction in download size using Real's new XZIP technology.
- Built-in decompression, unpacking, and installation capabilities of RealArcade.
- Automatically meet all of the RN installation requirements listed below.
- Automatically take advantage of RN's AutoUpdate capabilities.
- Give the user a consistent and simple way of installing your game through the console.

Packaging and Installation

There are 30 different specifications that your game must meet in order to install according to your game type mentioned above. It is critical you understand what's involved before going on to the *Install* section on page 28.

Specification	Definition
Installer/Uninstaller	This determines which install program will handle the game's install. This can be the RN installer, Installshield, Wise or a third-party tool. The install program must support command line passing of install path to the setup file.
Who creates install files	Either RN creates the install file or the game developer.
Packager/Unpackager	This determines which packaging application is used to compress the game files for distribution on the Web. This can be RealArcade Game Packager, Package for the Web, the installer itself or some other third-party tool. For games that use the RN installer, the RealArcade Game Packager will handle both the game packaging and installation. Also, the packager is compatible with the AutoUpdate feature.
Who packages game	Either RN packages the game or the game developer.
Compression used	RealNetworks uses XZIP technology to compress and package its games. For most file types, XZIP has the best compression ratios of any other compression type. For details about XZIP compression, see your Producer. With some game types, however, we will also allow third-party compression types as well. The RealArcade Game Packager creates archives of type RPG.
Format on download site	The format can be either a direct link to download a self-extracting EXE, or it can use an RGP format, which is a special file type that allows RealArcade to manage the download.
Supported command line parms	In order for RealArcade to install games properly and consistently, it will need to pass certain information to the installer at installation time, (i.e. silent mode vs. non, install path, language). The installer must support command line passing of install path.
Shortcuts created	This specifies where shortcuts to the program are allowed.
Registry entries	All games must write info to the registry, such as install path, uninstall path, game executable path, free vs. full, etc., to allow RealArcade to find the game on the system, launch the game, uninstall the game, and generally operate correctly.
Supported Features in Add/Remove Programs in Windows Control Panel	In the Add/Remove Programs function, extra info may be allowable including support info, version, etc.
Installing ODBC resources	Special install work may be necessary for installing ODBC resources and drivers, although this is rarely required for games. RealArcade doesn't have any special requirements.
Reboot required	Some programs may require a reboot to be fully installed.
Sys Resource Checking	This determines who handles resource checking, including hardware and free resources available.

Splash Screen	Some games have a welcome image that appears briefly (splash) upon install.
Welcome Dialog	A dialog box welcoming the user.
EULA Dialog	The EULA is the End User License Agreement. This is generally displayed with an “I accept,” or “I Decline” button to ensure that the user agrees prior to installation.
Readme Dialog	Some games may require a readme dialog box to appear before install.
Customer Info Dialog	Some developers want customer information, such as name, email address etc. This specification determines whether a developer can ask for this information or not.
Dest Folder Dialog	If applicable, the destination folder where the game EXE will reside.
Setup Type Laptop/PC Dialog	Some programs allow for special setups for laptops or desktops. However, other customized setups can also be available.
Custom Setup Dialog	Some games allow the user to change certain default settings of the installation.
Ready to Install Dialog	After all options have been specified by the user, this dialog box informs the user that the game is ready to install.
Setup Progress Dialog	Usually an elevator bar measuring the progress of installation.
Setup Complete Dialog	Once the setup is finished, a box may appear saying the setup is complete.
Custom Setup Actions Dialog	This is a dialog that informs the user that the custom specifications are being implemented.
Install Repair	If the installation goes bad, this is a feature to reinstall if necessary.
Windows 2000 logo compliance	If a program displays the W2000 logo, it has to comply with the Windows standard for installation. In this field, we specify whether this is required or not.
DRM solution used	DRM stands for Digital Rights Management, and deals with piracy protection for your games. Specifically, who handles DRM issues, you or RN.
DRM Dialog (TBD)	This may appear at install time as a serial # or CD Key at first run, or whenever the user plays the game.
Uninstall Confirmation	If the user uninstalls, the Uninstall dialog will allow them to save certain settings in the event he/she wants to reinstall in the future.

Install Specifications

Using the specifications defined above, we will now look at how the requirements differ depending on their game type. LithTech and RN Exclusive titles must use the RN installer and XZIP compression (RN Game Packager) that is included with RealArcade. This ensures correct installation of the game for use by RealArcade, minimal user interaction during game install, maximum file compression, and minimum file download size. RN encourages the developers of standard titles to take advantage of these benefits by following the same method. All of the functions in the left column are handled automatically by RealArcade. Games that decide to use their own installers and compression tools must follow the requirements in the right column. Items listed as “Yes” are required while items listed as “No” are not allowed and should be disabled during installation.

	LithTech and other RN Exclusive Titles	RN titles (standard)
Installer/ Uninstaller	RealArcade	Preferred - RealArcade Otherwise - InstallShield or Wise (no other third-party tools currently supported)

Who creates install files	RN	Third-party
Packager/Unpackager	RN Game Packager	Preferred - RN Game Packager Otherwise - InstallShield/Package for the Web, or Wise
Who packages game	RN	Third-party
Compression used	XZip (decompressed by RealArcade)	Preferred - XZip (decompressed by RealArcade) Otherwise - Game dependent
Format on download site	RGP pointing to XZip archive	Preferred - RGP pointing to XZip archive Otherwise - RGP pointing to self-extracting .exe
Supported command line parms	Silent mode, path name, setup language	Silent mode, path name, setup language
Shortcuts created	Programs folder in Start Menu under Real/RealArcade/<game name>that launches RealArcade to the appropriate game mezzanine. No end user desktop shortcut.	Programs folder in Start Menu under Real/RealArcade/<game name>that launches RealArcade to the appropriate game mezzanine. No end user desktop shortcut.
Registry entries	Install path, Uninstall, Launch, Free vs. Full (Note: These are the only required entries, although your game may require additional ones is necessary.)	Install path, Uninstall, Launch, Free vs. Full (Note: These are the only required entries, although your game may require additional ones is necessary.)
Supported Features in Add/Remove Programs in Windows Control Panel	Program name only. Uninstall launches RealArcade to complete uninstall. No Windows 2000 support info, version, icons, Change Button, etc.	Program name only. Uninstall launches RealArcade to complete uninstall or launches uninstaller. RealArcade installed games - No Windows 2000 support info, version, icons, Change etc. Other games - Game dependent
Installing ODBC resources	No	No
Reboot required	No	No
Sys Resource Checking	Yes (RealArcade)	Yes (RealArcade)
Splash Dialog	No	No
Welcome Dialog	Yes (performed by RealArcade)	RealArcade installed games - Yes (performed by RealArcade) Other games - Optional - handled by third-party installer
EULA Dialog	Yes (performed by RealArcade)	Yes
Readme Dialog	No	No
Customer Info Dialog	No	No

Dest Folder Dialog	No	No
Setup Type Laptop/PC Dialog	Optional	RealArcade installed games - Optional Other games - Optional - handled by third-party installer
Custom Setup Dialog	Optional	RealArcade installed games - Optional Other games - Optional - handled by third-party installer
Ready to Install Dialog	No	No
Setup Progress Dialog	Yes (performed by RealArcade)	RealArcade installed games - Yes Other games - Yes - handled by third-party installer
Setup Complete Dialog	Yes (performed by RealArcade)	RealArcade installed games - Yes Other games - Yes - handled by third-party installer
Custom Setup Actions Dialog	Optional	RealArcade installed games - Optional Other games - Optional - handled by third-party installer
Install Repair	RealArcade - Reinstall option	RealArcade installed games – Reinstall option Other games - Optional - handled by third-party installer
Windows 2000 logo compliance	No	RealArcade installed games - No Other games - Optional
DRM solution used (Beta 2)	RN (managed by RealArcade)	RN (managed by RealArcade)
DRM Dialog (TBD) (Beta 2)	Yes (performed by RealArcade)	Yes
Uninstall Dialog	Yes (Performed by RealArcade. Includes a confirm, save games and settings, save scores+)	RealArcade installed games – Yes (Confirm, save games and settings, save scores+) Other games - Save scores+, otherwise, game dependent

Game must use a Single File Self-extracting Installer

The entirety of the game should be contained in a single, compressed, self-extracting executable. Under no circumstances should the game require multiple file downloads in order to be installed (Mods and expansions are considered add-ons and may, of course be separate files). The file that is downloaded should be (in most cases) an .exe and must be executable by the console via a pre-defined command-line string.

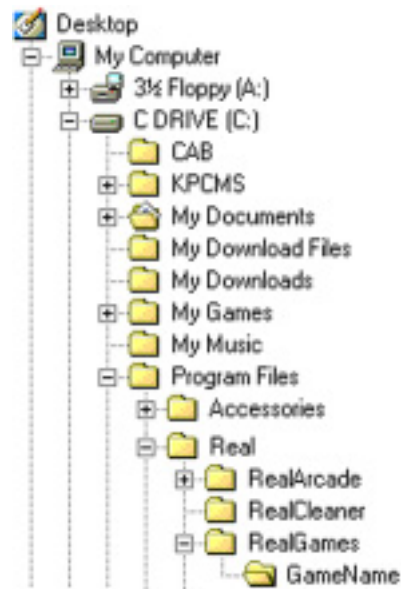
Install Dialogs

Installation dialogs should be kept to a minimum. This is to ensure that game installation is simple and consistent for each game, and because RealArcade manages many of the common installation functions whether or not you use the RN installer. Refer to the table above for those specific dialogs that are permitted.

Default Install Directory

For the default install directory, the following requirements apply to all games:

- To simplify the game installation process in RealArcade, the user cannot change the default install directory for the game directly, however they CAN set a preference in the console for the default install directory for all games - in which case install directory for the game would be [user defined preference]/[gamename].
- Game files are always installed in a direct sub-directory of the default install directory (no sub-sub-directory installs, i.e. - [pubname]/[devname]/[gamename])
- If you choose to use a third-party installer, the console must be able to pass user-defined install path to game installer as a launch command-line parameter. Game installer must be able to accept the user defined install path as a launch command line parameter so that the install directory is correct. If your installer does not support the passing of command line parameters, you should consider using the RN installer. In some exception cases, RN may approve third-party installers that do not support command line parameters. Games should not create any desktop shortcuts. All games will be launched and accessible via RealArcade.
- The default install path should be “C:\Program Files\Real\RealGames\<gamename>”.

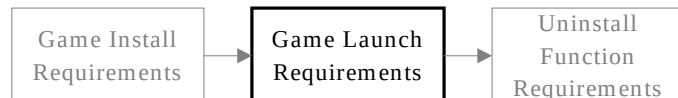


Windows Start Menu Icons

Start menu shortcuts will be installed into the root of the Real\RealArcade\<gamename> program group. This should also be where all the game related files are located.

Game Launch Requirements

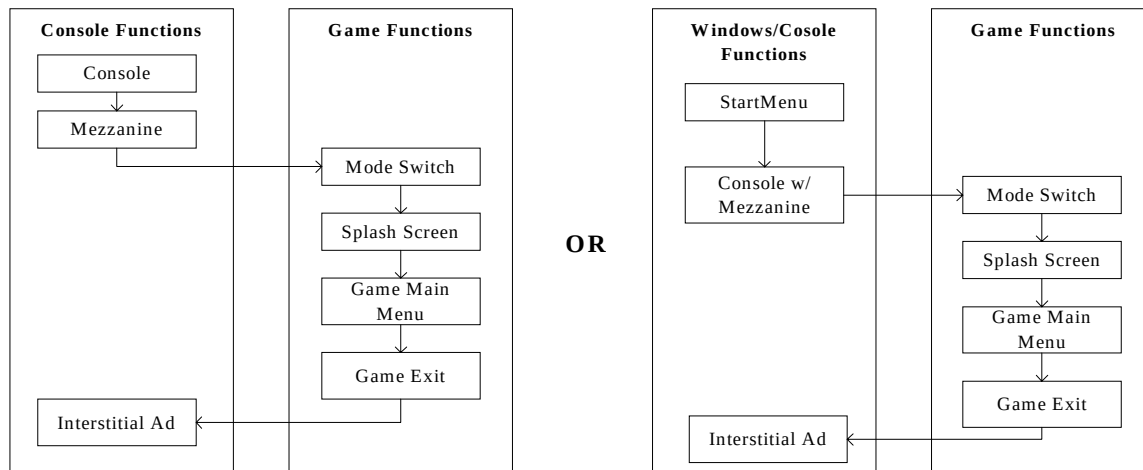
We also have guidelines for launching your game with RealArcade (or via a shortcut). These requirements differ depending on if your game is for single player support or multiplayer support.



Single Player Support

No title will be launchable/playable from outside the RealArcade console. Games should use the RealArcade APIs to ensure that RealArcade is installed on the user's system and that it is active. See the API section and the *RealArcade API Programmer's Guide* for more information. Start Menu shortcuts should launch the console to the appropriate Mezzanine. See your RN Producer for more information about command line options for RealArcade.

Once the user has launched the game from the game mezzanine, the game should launch to the main menu without additional user input. This includes any kind of "Login" (as in subscription play, pay-to-play, or server-based massively-multiplayer games), or other security measure (such as unlocking keys, serial numbers, CD-Keys), renderer choice dialogs, etc. Below, you will see diagrams that will illustrate the flow of launch to ad delivery. (Note that in the case of windowed games, the Video Mode switch won't happen, of course.)



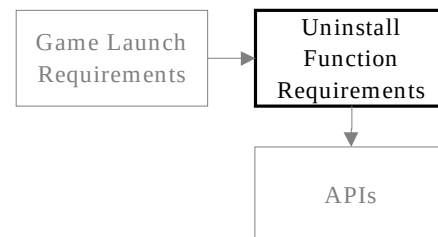
Multiplayer Support

RealArcade supports multiplayer gaming, matchmaking, and game launch. The Game Profile Data will need to reflect this capacity, as it will need to allow for a command-line or DirectPlay launch for players to either host a game or to join a game that someone else is hosting. You will need to provide your Producer with two command line strings, one for launching as a host and one for launching to join a game. Or, if your game is DirectPlay-supported, your Producer will need the appropriate DirectPlay lobby launch information. This command line or DirectPlay launch information will be a part of your Game Profile Data.

Uninstall Function and Requirements

The uninstall utility is one of the few game elements that are accessible both within and outside the RealArcade console. Provisions should be made to allow uninstall to be accessed through any of the following methods: from the console, start menu, or Windows Add/Remove Programs. The game's uninstall utility should automatically remove ALL game files, registry entries, directories etc. that were placed on the player's machine by the game with the following exceptions:

- Saved Games, Game Preference/Configuration information, Player Profiles, game registration info, and other game-related elements that might be useful to leave installed for use with the full version or future use if the player decides to re-install the game.
- However - the uninstall should give the player the OPTION of removing any or all of these elements during the uninstall process, so that the game and all associated files can be easily and completely purged from the players computer.



Game uninstall dialog boxes and elements should be created in accordance with the style guide. For more information, see the style guide on page 33.

The uninstall progression should be as follows:

Launch uninstall -> Confirm uninstall -> Uninstall options -> Progress indicator -> Results Text -> Exit

APIs

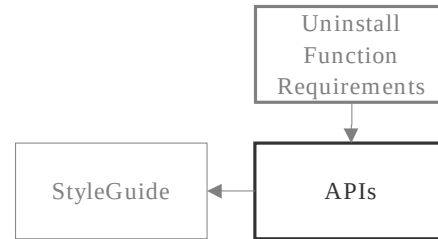
All games supported by RealArcade must use a basic set of APIs to ensure that the game is being run through the console. These calls also ensure that RealArcade can properly track the life of the game, detect game hangs, and ensure consistent game behavior. Ask your Producer for the *RealArcade API Programmer's Guide* for more information about the benefits of the APIs and how to use them.

Important Note: Developers must implement all the function and message calls labeled “Required” and “In Plan” in the API guide.

Special note to existing Real.Com developers:

For some developers reading this manual, you’ve already published a game through Real.com Games outlet (before the console ever existed). When the user installs RealArcade, it will replace the old interstitial-ad DLL with a new library. This new library will ensure that the game is launched through RealArcade by doing the following:

- RealArcade does not exist -> DLL encourages you to get RealArcade.
- RealArcade exists but is not running -> DLL encourages you to use RealArcade
- RealArcade exists and is running -> Does not display the previous promotion at launch or on game exit.



SDK Info and Documentation

This section is for all information regarding the SDK docs you will need to develop for RealArcade.

Console SDK Docs

See the *RealArcade API Programmer's Guide* for details. Certification tools will be added later.

LithTech SDK Docs

Through the RealPartner Program, we avail the developer with one of the industries finest game engines on the market. Furthermore, the developer need only pay a minute fraction of the original cost for the engine, while still receiving all of its benefits. To take advantage of this offer, the developer needs to sign up as a RealPartner, minimum level II, at the following URL: <http://partners.real.com/>. A level II developer membership is **\$495**, and allows the developer full access to the current LithTech Development System SDK. **There is no further charge for using the LithTech Development System if all LithTech games are distributed through RealNetworks.** If the developer wishes to publish a game using the LithTech Development System through someone else (in addition to or instead of Real), you can do so, but you would have to work out a separate license agreement with LithTech. For more information about the benefits of the RealPartner program, go to <http://partners.real.com/isv/gamedev.html>. For more information on the LithTech Development System, visit: <http://www.lithtech.com/>.

Style Guide

The purpose of the style guide is to provide a uniform end user experience when installing and using games for RealArcade. This allows the user to have a predictable and consistent experience with the basic operations and functions of the game.



Overview

The style guide covers the following stages of game functionality:

Stage	Detail
Game Install	The user installs the game.
Launch game from console	The console may display an advertisement prior to launching your game.
First Run	First Run is for things the user must configure the first time the game is run. This is the first opportunity for First Run UI, before the screen switches into fullscreen mode (if full-screen game).
Opening Sequence	Game may display one or more introductory screen or animations.
First Run (opportunity 2)	This is the second opportunity for First Run UI, after the screen switches into fullscreen mode (if full-screen game).
Menus	For games that run full-screen, the main menu and submenus expose all game-related functionality. For games that run in windows, the menus should take on this responsibility.
Play	Behavior while the user is playing the game.
Pause	If during Pause the user selects a console option (e.g. Jump to RealArcade), the game notifies the console and steps aside; likewise, when the user is finished with the console and is ready to return to the game, the console notifies the game and steps aside.
Exit to Console	Game may display one or more closing screens or animations REALARCADE may display an advertisement after the game has ended (e.g. to upsell to the full version of the game).
(Uninstall)	If the user wishes to uninstall the game, the game should uninstall completely and cleanly. Also, the game should convey to the user that the uninstallation process has successfully removed the program from the user's system.

Gameplay

Install

This section assumes you want to use your own installer, as the installer that comes with RealArcade is already to RN's own specifications (obviously). Your installer should follow the subsequent guidelines:

- Title bar reads "Installing <game name>"
- If desired, a status display can be shown that describes what is currently being installed; the header reads "Installing:"
- The progress bar should animate from empty to full as the install progresses. Ideally, it moves every few seconds to assure the user that something is happening.
- If it is possible to cleanly cancel out of the install, without leaving any traces of the attempted install, then include a Cancel button at the bottom. If there are times during the install when it is not possible to cancel, then disable the button.
- After the install is completed, no confirmation dialog should be presented, nor should the user be offered an opportunity to launch the game immediately.

Launch

Once the game is launched, it should take the user to the main menu without intervention; the user should not have to click in order to get past screens before arriving in the main menu. The exception is a First Run sequence that only appears the first time the user runs a game.

First Run

Examples of First Run actions:

- Introductory animation or instructional sequence
- Collect basic configuration information that will unlikely be changed later (e.g. select game peripheral, select display device)
- Collect information to create a player profile

Any information collected during First Run should be changeable later on within the menus.

Play Game

Key	Description
"Esc" "Pause/Break"	If in-game, then this pauses gameplay and takes you to the Pause menu screen. If paused, then this resumes gameplay
"Print Screen/Sys Req"	Put screenshot in clipboard

Pause

If during Pause the user selects a menu item that takes him to the console, the game should call the console and leave full-screen mode, waiting for the console to call it back. After the game receives a message from the console that it should continue, the game should place itself back in full-screen mode. The game should make it clear to the user that he or she will not exit the game, but simply gain access to game mezzanine information and console functions. This feature is called "Jump to RealArcade."

Save/Load Game

For games that allow user to save game under different names, the game should suggest a unique default name for the saved game so that the user doesn't have to make one up.

Game Over

After the game has ended and final scores are displayed or closing sequences are played, the user should be returned to the main menu. If a game is multiplayer, it should offer the same players the option of replaying again with the same participants.

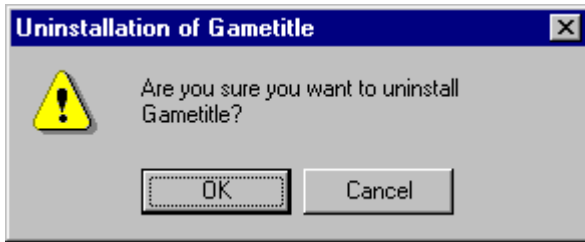
Game Exit

The game should prompt the user to ensure that they're ready to quit the game ("Are you sure you want to exit the game?" [OK] [Cancel]) After the user has chosen to leave the game, the game should fade to black and set the screen resolution back to what it was before the game started. The console will take care of presenting upsell messages after that.

If there are any closing animations or sequences before the game completely exits, they should not include advertising (other than a game upsell), and the user should be able to fast-forward past them with the space or ESC key. As its last action, the game should notify the console that it has exited; this will signal the console to bring itself to the forefront of the desktop.

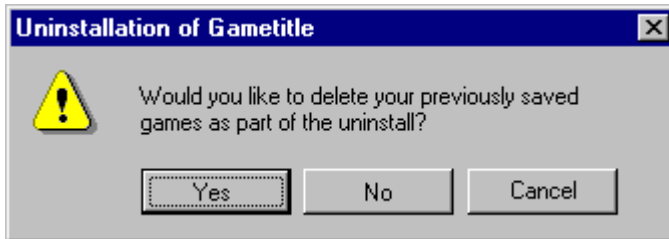
(Uninstall)

In the unlikely event that a user would want to uninstall your game, the following guidelines should be met. Before uninstalling, confirm with the user that it's really what they want to do:

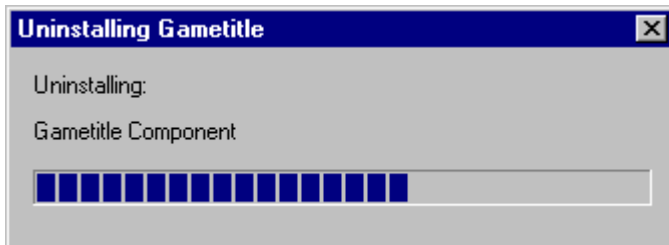


- This is the recommended uninstall confirmation dialog layout
- Title bar reads "Uninstallation of <game name>"
- Text reads "Are you sure you want to uninstall <game name>?"
- OK is the default selection. Once the user clicks it, the uninstall starts immediately.
- Clicking Cancel closes the dialog and aborts the uninstall process

If there are some uninstall options, for example whether the previously saved games should also be deleted, then additional confirmation dialogs may be presented:

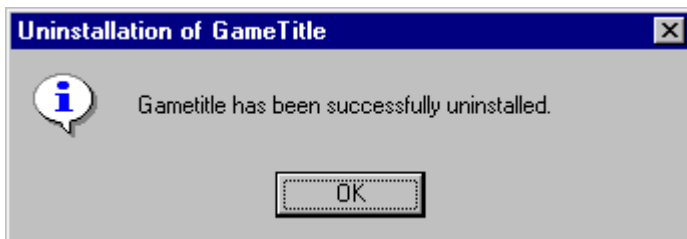


During the uninstall:



- Similar in style to the Install progress dialog, except no option to Cancel is offered.
- The uninstall should remove the directory the game was installed into, unless the user requested that files be left behind (e.g. previously saved games).

Once the uninstallation process is complete, a confirmation dialog should be presented:



Game Controls and Menus

RealNetworks strongly suggests that your game adopt these game controls and menus so that gamers who have played other Real games can quickly figure out how to find their way around your game.

General Keyboard Operation

Action	Keyboard	Mouse	Joystick	Gamepad	Steering wheel
Move menu focus	Up/Down	--	Up/Down	Up/Down	--
Rotate among options for menu item that currently has focus (e.g. possible screen resolutions, or Yes/No or On/Off options)	Left/Right	--	Left/Right	Left/Right	--
Mouse cursor movement	--	cursor	--	--	--
Select whatever currently has focus	Space or Enter	--	fire button 1	fire button 1	button 1 / gas
Select whatever cursor is currently on top of	--	primary button	--	--	--
Leave the current menu screen and go up one level to the previous menu screen	Backspace or ESC	secondary button	fire button 2	fire button 2	button 2 / brake
Move focus in UI primary axis (e.g. scrolling through a list of menu items)	--	scroll wheel	--	--	steering wheel or button 3 / button 4

For Full-Screen Games

- If there is a main menu, then it must be possible to start the game directly from the main menu.
- It must be possible to navigate menu system using four direction keys and "fire" button.
 - Up and down arrows move the focus up and down through the listed menu items; at the bottom of the list, the focus wraps back up to the top item and vice-versa.
 - Left and right arrows iterate through the possible settings of each option
 - If the user has a game controller installed that can express four directions (e.g. joystick, gamepad) then the game should be able to use those controls in lieu of the keyboard.

It should also be possible to directly select a menu item by point-and-clicking with the mouse, but this is optional if the game itself doesn't require use of a mouse.

Menu Organization

Menu	Submenu	Sub-submenu	Details
"Play Game" or "Return to Game"			Shows "Play Game" if user hasn't started a game yet; shows "Return to Game" if game is currently paused
"Load Game"			
"Save Game"			

"Restart Game"			Shows only if game is currently paused; quits current game and restarts a new game Recommended: confirmation dialog "Are you sure you want to quit your current game and start over? [Yes] / [No]"
"Preferences"			If the Display and Sound options are exceptionally simple, or if only one is adjustable, then it is not necessary to submerge the option under the "Preferences" menu.
	"Gameplay"		Any game-specific options (e.g. how smart the bots are)
	"Display"	"Video Mode"	
		"Screen Resolution"	
		<and additional game display options>	
		"Advanced"	Tweaky display options that the basic user is better off not playing with. If appropriate, present user with a warning dialog confirming that he really wants to edit these parameters.
		"Done"	Return to previous menu
	"Sound"	"Volume"	Overall volume
		"Sound Effects"	Relative volume for sound effects
		"Speech"	Relative volume for in-game dialog
		"Music"	Relative volume for sound
		<and additional game sound options>	
		"Advanced"	Tweaky sound options that the basic user is better off not playing with. If appropriate, present user with a warning dialog confirming that he really wants to edit these parameters.
		"Done"	Return to previous menu
	"Controls"	"Keyboard"	
		"Mouse"	
	<and additional game preferences>		
	"Advanced"		Tweaky general options that the basic user is better off

			not playing with. If appropriate, present user with a warning dialog confirming that he really wants to edit these parameters.
	"Done"		Return to previous menu
"Multiplayer" <and additional game menu items>			Room for additional game menus
"Jump to RealArcade"			Allows the user go directly to the RealArcade console without leaving the context of the game. This menu item should display the console logo next to it in order to indicate that selecting the menu item will take them back to the console. (Potentially, after Beta 2, we will allow the user to jump directly to a console function instead of the console itself.)
"Exit Game"			Leave the game and return to the console.

It's OK to deviate from the exact menu structure, but we recommend keeping the order of menus similar and using the same terminology. In addition, some of these menu items may not apply to your game. If a top-level menu item has only one or two submenus underneath, consider putting the submenus at the top level instead.

The screen space set aside for menus should accommodate 10 menu items. If there are more than 10 menu items, then the menus should scroll vertically; when menus are scrolled out of view, icons at the top and bottom should make it clear that there are more menu items out of view.

For Games in Windows

Games that run inside windows can use either standard Windows menus, or the same kind of menus as full-screen games. If using standard Windows menu, the game should follow this structure wherever possible:

File	Edit	Play	Help
Load Game... Ctrl+O Save Game... Ctrl+S Print... Exit to Console Alt-F4	Cut Ctrl+X Copy Ctrl+C Paste Ctrl+V	Play Game Ctrl+P Pause Game Restart Game Ctrl+R Preferences...	Contents F1 About <game>...

- If there is a dialog box where all the user options are centralized, make it available from a "Preferences..." menu item which should be placed under the Tools menu; or if no Tools menu exists, then it should be in the View menu
- All menu items should include keyboard accelerators
- Keyboard shortcuts (e.g. "Ctrl+C" for "Copy") should be supported and also displayed in the menu.

Messages from the Console

At any point while the game is running (while in main menu, during opening sequence, during gameplay), it may receive messages from the console that should be displayed to the user. See the *RealArcade API Programmer's Guide* for a complete list. Examples of some of these messages are:

- Message from the console regarding download status, or that a download has completed

- Request by console to exit game and return to console (e.g. console detects serious error or user tries to exit the console when a game is still running.)
- Request by console to restart the game in progress (Beta 2)

Ideally, messages received by the game are displayed near the top center of the screen in a font size that is easily visible (recommend font size that is 4-5% of screen height). Depending on the screen layout of a game, it may fit better elsewhere on the screen, but it is important that it is positioned and sized so that it is noticeable to the user without interfering with gameplay. Some games may use their in-game chat area to display these messages.

When the game displays the message, the message should be accompanied by the Message Alert sound. The message should be displayed at least until the message timeout, which is 10 seconds. Only one message is displayed at a time; if multiple messages are sent in rapid succession before the user has a chance to dismiss each one or for the timeout to expire, then the previous message will be overwritten. It is not essential that the user must acknowledge each message by selecting "OK," although that is the desired behavior.

Messages sent from the console may be up to 60 characters in length. If possible, the game should be able to display all of those characters on one line. If it is necessary to display the message on multiple lines, the game should word-wrap the message.

The following keys should be supported for messages:

- Mute/unmute toggle for messages to turn them off/on; this setting should be reset to "on" each time the user launches the game. Recommended key: "\"
- Dismiss button to clear the current message from the screen. Recommended key: Backspace
- Responding to Yes/No messages. Recommended keys: Alt-Y, Alt-N (Starting Beta 2. See below for more on Prompting.)

Music

Other than games that are focused around their own soundtrack, the game should coexist with any music being played back by RealJukebox prior to game start. Likewise, the game should respect any CD already playing in the CD player before the game started.

Prompting the User

There are several scenarios where the game may prompt the user for a response. Whenever possible, use the following forms:

Scenario	Description	Button labels
Notification	Let the user know that something happened. Example: "The other player has unexpectedly left the game; his computer may have crashed or he may have become disconnected from the internet"	OK
Confirmation	The user is about to do something he may regret; reiterate what he is about to do and ask for final confirmation. Selecting Cancel returns the user to the state he was in before attempting the action that caused the confirmation to appear. Example: "You have chosen to use the DirectX drivers"	OK / Cancel
Yes / No	The user has to choose between two paths. Example: "That saved game already exists. Are you sure you want to replace it?"	Yes / No

Yes / No / Cancel	The user has to choose between two paths, but also has the option of returning to the state before the question was asked. Example: "Do you want to save the game before exiting?"	Yes / No / Cancel
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Localization

International customers can make up a significant proportion of a game's fan base. Wherever possible, try to keep localization in mind as you develop your game. If possible, keep all strings and graphics that include text in resources that can later on be altered without requiring a complete overhaul of the code.

Real intends to make the console available in several languages, starting with:

- German
- French
- Japanese

Hardware and Software Requirements

- Games that utilize gaming peripherals should support Windows Game Controller control panel
- Games with multiplayer matching should support DirectPlay, or command line launch
- Games should work with Windows 95 OSR2, Windows 98, Windows ME, and Windows 2000.
- Games that utilize a web browser should work with v4 browsers

Branding Guidelines

The following outlines the style guidelines for game content.

Branding for RealNetworks

All titles will include the following RealNetworks branding and notification information. To acquire the appropriate logos for display, please go to www.realnworks.com, click the link for "company," and from the next page, click "company logos." Contact your assigned Producer or dnixon@real.com if you have questions about specific implementation of any of these:

Install

RealNetworks logo on installer screens with "Distributed by RealNetworks" indicated textually.

Game Mezzanine

Publisher, Technology, and RN will have branding messaging on the mezzanine, as well as game info and upsell information. The EULA is on the support Tab of the mezzanine. No copyright or license information will be displayed in the mezzanine.

Game Startup (demo and plus)

Shared logo splash screen (3 sec, user bypass with ESC key or L-click). All copyright and branding information on this screen, with "Distributed by RealNetworks" indicated textually

In-Game(demo and plus)

Help menu/F1 accessible "About" dialog contains RN/RealArcade logo and "Published by" text, CS/TS contact info. Copyright notification and "Published/Distributed by RealNetworks" messaging on title screen.

In-Game (demo only)

In game "hot" purchase link on all game menu screens. RealNetworks logo in any graphical upsell messaging. Help menu/F1 accessible "About" dialog contains purchase link and information.

Branding for RealArcade

All references to RealArcade, RealPlayer, or RealJukebox must contain trademark symbol as supertext. Additional logo branding on other menu and interface screens, or in-game is optional and can be implemented as the developer feels is appropriate.

Branding for Real.Com Games

**Guidelines for displaying this logo are TBD. See your RN Producer for the latest requirements.

Branding for LithTech Engine in the Game -TBD

**Guidelines for displaying this logo are TBD. See your RN Producer for the latest requirements.

Miscellaneous

The following documents important miscellaneous items for developing for RealArcade.

Carryover of preferences from Free to Full

Saved games, game preferences/configurations, user profiles, and other potentially persistent game elements should work in both free and full versions so that when the user upgrades, setup and work accomplished in the free version is not lost.

Splash Screen Cancel

Players should always be able to bypass splash screens manually with ESC or Left-click

Default Screen Size on Launch

If the game is a full-screen application, it should always launch full-screen by default unless some parameter in the game can be set by the user to default launch to a different screen size. In other words - without specific user actions, full-screen games should always launch full-screen.

If the game runs is designed spawn a separate window and to run in windowed, the window can be whatever size works best for the game - but the game should be centered in the screen area regardless of resolution. Care should be taken to ensure that in a multi-monitor situation, the game centers in the main monitor - not "between" the two monitors.

If the game is designed to run "in-place" in the content window of the console - it should be optimized to "fill up" the console content window regardless of screen resolution.

RN Standard Games EULA

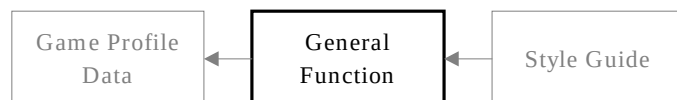
The End User License Agreement (EULA) for your game is dependent on your contract signed with RN. For a sample of what a EULA might look like, please see the EULA section on page 49.

E-mail Notification

Any offers to send email to the user should always be in an opt-in scenario. In other words, the default preference is for **no** email to be sent to the user. The user must act (or opt-in) to indicate a preference for email notifications. The only exception to this rule is if the email is vital to gameplay, such as a password or critical bug fix.

General Function

This section deals with various aspects of console integration, including use of the registry, AutoUpdate, and other miscellaneous issues



Use of Windows Registry

Unless otherwise noted by your Producer, you may write any game related information to the following registry:

HKEY_LOCAL_MACHINE\Software\<developername>\<game>

Where <developername> is your name, and <gamename> is your game name. It is important to note that RealArcade will automatically detect your game's existence as long as you have your game listed in the registry. It is also important to keep in mind the following guidelines:

- In the case where a game requires installation of other registry keys, those keys should be written to HKEY_LOCAL_MACHINE\SOFTWARE\<companyname>.
- In the case where a game must "hide" registry entries (for security reasons), those must be approved and tested on a case-by-case basis. Developer must provide RN with a list of all keys and possible value or value types that the game installs or modifies prior to release as well as descriptions of the keys' function.
- If you've already developed and published a game for RN, please contact your Producer on how to migrate to the new RealArcade system.
- At uninstall time, any keys created by the game should be removed.
- Under no circumstances are registry entries to be written to an /RealNetworks/ or /RealArcade/ Registry directories. This restriction also forbids creation of sub-directories within these directories.
- Of course, modification of any existing registry entries in those directories is also expressly restricted.

Required registry keys for all Games

The following items are required in the registry:

- Fully qualified path to the game executable.
- Fully qualified working directory for the game.
- Fully qualified command that launches game uninstaller.
- State of game, either a demo or full version.

Below, we have outlined the preferred key names and paths:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\App
Paths\<game name>.exe

(Default) or GameExe - Fully qualified path to the game executable

Path - Fully qualified working directory for the game

LicenseKey – Any value set by the game (The existence of the key is enough to indicate that the Full version is installed.

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\
<game name>

UninstallString - Fully qualified command that launches game uninstaller.

It is not essential that they use the names "GameExe", "GamePath", and "UninstallString" or that the game uses these paths, but those are the preferred names and paths. It is essential, though, that they have three registry entries that point to these values.

Distinguishing Demo from Full Versions

Here are the registry guidelines to follow for the demo or full versions:

- If the Demo and the Full version can coexist on a user's system, then each must have its own distinct registry keys and values (i.e. at least one of the registry keys must be distinctly different between the Demo and the Full...preferably all three).
- If the Full replaces the Demo, then each must have its own distinct registry keys and values or the Full must be distinguishable from the Demo by either: 1) the file size of the game executable or, 2) the version number of the game executable.
- If the Demo and the Full are the same executable, but the Full features are unlocked by a key or other method, a registry key must exist for the Full version that does not exist for the Demo version (i.e. license key). Below, we have outlined the preferred key name and path:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\App Paths\<game name>.exe

LicenseKey - Any value set by the game (the existence of the key is enough to indicate that the Full version is installed).

Use of URL's

The only URL's acceptable for use in game are those that point to website properties of RealNetworks, Inc. No URL's can exist in game, menus, supporting documentation, or be installed as windows shortcuts which point to directly to website properties that are not owned by RealNetworks.

URL's that promote your product can be created to point back to other remote website/html locations (i.e. redirect). RN will review the content of these resources, and we reserve the right to remove these links at any time. Under no circumstances will we allow a redirect to another ecommerce site competing with RN, either directly or indirectly. Nor would we allow a redirect to a site that has links to other ecommerce sites competing with RealNetworks.

Ecommerce Support

Subscription-based Play/Pay-to-play not supported

Games that require login information on launch in order to validate subscription-based or pay-to-play models are not currently permitted.

Key Validation

Until the Beta 2 release of RealArcade, you will need to use your own system for key validation, if desired. You will need to work with your Producer, however, as to how your system will work with RN's ecommerce system. Furthermore, your Producer will help you migrate to RN's method in preparation for the Beta 2 release.

Digital Rights Management (DRM)

As of Beta 2, RealNetworks plans to implement a key validation system using Digital Rights Management technology (DRM). This involves a client application that will be bundled with the console. When a user wants to purchase the game, a client will take their financial information locally on their computer. Once connected to the Internet, the client will automatically send this information to RN's servers, and if the transaction proceeds without error, it will send the license certificate to the DRM client. The client will then "unlock" the game. All of this will be performed "under the covers," eliminating the problems users typically have with obtaining the key or entering the registration code. This also decreases the opportunity for bootleg copies of full games.

AutoUpdate / Patch / Game Mod / Expansion Pack Support

The AutoUpdate feature is available **only for games that use the RN installer that is bundled with RealArcade** (e.g. LithTech and exclusive titles). For games that do not use LithTech's engine, or do not use RN's installer, users can obtain the patch by manually updating through the console. RN will host a patch site for all manual patches and RealArcade will provide links to that site in the game mezzanine. Furthermore, AutoUpdate will be used **only for patches**. Game Mods or Expansion Support will be available only through the Manual update feature in the console, or via the game catalog as effectively a separate game.

AutoUpdate is for game updates, mods, and patches that are free. Currently, no e-commerce can occur through AutoUpdate. To post an update to the AutoUpdate server, contact your assigned Producer and they will provide you with tools and instructions. Basic pieces are:

File, files, or patch files to be updated assembled into a "RUP" file with the RN RUP toolkit available from [URL]. Submit the RUP to the RN Producer assigned to the project, and they will handle testing and posting of your RUP to the AutoUpdate server.

Certain faults or issues related to the game may require immediate, mandatory posting of an AutoUpdate to a game product. This includes but is not limited to:

- Removing function/feature of a game that violates RN's privacy policy

- Correcting a "showstopper" bug in a product that seriously impacts gameplay and/or e-commerce
- Correcting an error or issue with a previous AutoUpdate that seriously impacts gameplay and/or e-commerce
- Removing/Correcting any game content deemed offensive or inappropriate
- Removing/Correcting any aspect of the game that puts RN at risk of legal action
- Others TBD

RN reserves the right to request such an update. In most cases QA will catch these things, but if the need arises, RN Producers will work closely with developers in this case to ensure prompt and correct action. Patches may occasionally require a change in the Game Mezzanine, the Catalog, or Game Profile Data. If this is the case, you should deliver the new information to the Producer along with the patch.

Files over 500k

Should be distributed as a "patch" that contains only the delta between the old version(s) and the new to minimize user download size for the update.

Files under 500k

Should be distributed as a full file to "overwrite" the existing (presumably older) versions being updated.

Official “Mods” or “Expansion Packs”

Depending on content these might be handled one of two ways -

- 1.) In most instances, a "Mod" is, in itself, a new experience (Opposing Force vs. Half-Life) in this case, though, the mod and original game share some resources (engine, data, etc.). A mod would be installed as a completely separate game with its own gameId, Game Profile Data, and its own game mezzanine in RealArcade, although it may share some files with the original game. For all intents and purposes, the console thinks the mod is a different game.
- 2.) An extension of an existing game. If there is one gameId that the mod and its original game share, then RealArcade will treat them both as one game with one mezzanine, (i.e. one set of Game Profile Data, etc). The mod's installer will need to replace or modify the game executable or other game files to include the mod. If there are changes in the way the game is found, launched, uninstalled, etc. as a result of the mod, you should give your Producer updated Find-and-Launch Data and other Game Profile Data. If the game information that is displayed in the game mezzanine needs to change, this information needs to be given to your producer as well. For mods that share the same gameId as its original game, RealArcade will not support launching both the game and its mod independently. All choices as to which Mod to play (if there is such a thing), or allowing the player to otherwise utilize new game content is handled by the game. The console treats the mod as a new version of the game with new Game Profile Data. Any references to the old or pre-mod game are lost and must be handled by the game itself.

Community/Unofficial “Mods”

While a huge vehicle for promoting the game's community, we will not sell or distribute any unofficial "mods." However, we will need supporting files for these mods, such as Find and Launch Data and other Game Profile Data so that we can find, launch, and uninstall them on a user's system. These mods can be downloaded and installed outside the console, and they may change the function of the game. From the perspective of RealArcade, the mod will be treated as a new game if it has a different gameId and Game Find and Launch Data or as the same game if the ID and data are the same. All it does is launch the game, and at that point the game handles all elements of the mod. These mods may not be placed on AutoUpdate. RealNetworks does not support or warrant these mods in any way, unless they are sold or distributed from RN's site. These mods may break the functionality of the game in RealArcade if they change Find-and-Launch Data for the game, and that data is not made available to RealNetworks.

Suggested Game Footprint

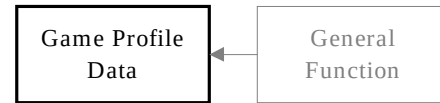
We recommend the following guidelines maximize game conversion rates:

Bundled games - Free version: up to 5MB, Full version: up to 10MB (**Note:** A bundled game is a game that is bundled with the RealArcade Console.)

Non-bundled games - Free version: up to 10MB, Full version: up to 20MB

Game Profile Data

Each game that is released on Real.com Games and is playable through RealArcade must have game profile data registered for it so that RealArcade can find your game on a user's system and so that your game can take advantage of RealArcade's features. As stated in the introduction to this manual, the Game Mezzanine gives the user access to the core functions of the product, namely downloading and purchasing games. We encourage you to maximize your biggest leverage point to its fullest potential by taking advantage of all the mezzanine has to offer. To do this, we need from you the following items:



- 1.) MetaData File (TXT or XML files) – General information to display in the game catalog or the game mezzanines
- 2.) EULA (TXT) – End User License Agreement
- 3.) README File (TXT, HTML, or RTF) – Game-specific information. Should not be duplicated from other Game Profile Data.
- 4.) Quick Start File (TXT or RTF) – Simple instructions to start playing the game (may include keyboard shortcuts) displayed on the Manual Tab of the game mezzanine.
- 5.) Game Manual File (TXT, HTML, or RTF) – Printable, full version of the game manual. (Optional)
- 6.) Known Issues File (TXT or RTF) – List of known issues with the game.
- 7.) Hints, Tips, and Cheats File (TXT or RTF) – Helpful hints and tips that would be useful to improve game play or get folks past tricky areas. Also, any cheat codes that the game supports.
- 8.) Help File (HLP) – Helpful information about playing the game. (Optional)
- 9.) Mezzanine and Catalog Graphics (BMP, at least 24bit) – Box art or a screen image to display in the catalog and in game mezzanines.

The above items are described in detail below. With the above information, **RN** will create a set of XML files that will use this info in conjunction with the RealArcade console, or we will work with you to enter the information into a tool that automatically creates the necessary XML files. Contact your Producer when you are ready to provide this information.

MetaData File

This file can be either a TXT or XML file, and will contain mezzanine information or file names.

Information	Description
Game Name	The name of your game.
Executable Name	The name of the single executable file that is launched to install your game.
File Size	The size of the executable (in bytes).
File Creation Date	The date the executable was created.
Version	The version of your game.

Software and Hardware requirements	This includes the following information: 1.) Minimum/Optimum Processor Type 2.) Minimum/Optimum Processor Speed 3.) Minimum/Optimum Memory (measured in bytes) 4.) Minimum Disk Space to Install Game (measured in bytes) 5.) Minimum Disk Space to Run Game (measured in bytes) 6.) Is 3D Hardware required? (Yes/No) 7.) Minimum Video Memory (measured in bytes) 8.) Minimum Color Depth Bits (minimum of 8, multiples of 8) 9.) Minimum Monitor Resolution 10.) Minimum Direct X Version 11.) Core Dependency Game ID 12.) Single Player Minimum/Optimum Connection Speed (measured in bits per second) 13.) Multiplayer Minimum/Optimum Connection Speed (measured in bits per second) 14.) Supported Peripherals 15.) Does your game support EAXA Audio? (Yes/No) 17.) Any additional system and networking requirements for your game (not listed above)
Operating System	Your game is compatible with which of the following operating systems: Windows95 Family: Win95 (First Release) Win95 SP1 or Win95A (Win95 Gold + Service Pack 1) Win95 OSR2 or Win95B (First OEM release of Win95) Win95 OSR2.5 or Win95C Win98 (First Release) Win98 SP1 (Win98 Gold + Service Pack 1) Win98 SE (Second Edition) Windows Millenium WinNT Family: WinNT 3 WinNT 4 WinNT SP1 through WinNT SP 6 Win2K or Win2000 (Windows 2000) Win2k SP1 (Windows 2000 with Service Pack
Game Description	Basic description of game, background story, or fundamental control aspects.
Registry Information	Include all registry keys you write to, and what you write to them. These registry entries should include the following info: 1.) Fully qualified path to the game executable. 2.) Fully qualified working directory for the game. 3.) Fully qualified command that launches game uninstaller. 4.) Demo or Full

API level support	This determines the level of API integration you are using with the console. Currently, this is Yes or No although in the future there may be different levels of support.
Launch Information (single player & multiplayer)	Command line strings and parameters for launching. For multiplayer games, one for launching as a host and one for launching to join a game. If your game is DirectPlay-supported, we need the appropriate DirectPlay lobby-launch information
Is game full-screen, windowed, browser, or in-place (in the RealArcade console)?	See your RN Producer for questions or issues.
Key files, and file sizes	A list of all the files that make up your game after it's installed, and their sizes.
Install and uninstall information	Locations of all files on the user's system, as well as the file and path to uninstall.
Multi-player host and join launch commands and arguments or DirectPlay launch info (where applicable).	Information needed to launch your game in multi-player mode. See your RN Producer for questions or issues.
ESRB Rating	As mentioned in the Content Guidelines, we need the ESRB rating of your game.
Country	The game's country of origin.
Year Released	The year of your release date with Real, or if you have previously released this game elsewhere, the year it was released.
Copyright data	If your game is copyrighted, we need the year and other pertinent copyright data.
Internet Play Supported (Yes/No)	Does your game support playing over the Internet? See your RN Producer for questions or issues.
Number of players supported.	What is the maximum number of players that your game supports? See your RN Producer for questions or issues.
Language(s)	What language(s) for the game will you be releasing through RealNetworks?
Heads-up Display	If the game uses a Heads-up Display (HUD) there should be an explanation of how to read the information and where each piece of info is displayed in the HUD.
Technical Support contact information	All relevant, email addresses, phone numbers, web sites, or any other channel you use to give the user technical support for your game.
Any important information about configuration options	See your RN Producer for questions or issues. Can be included in the Quick Start, Readme, HLP, etc.
Start Options/Flags	See your RN Producer for questions or issues.
URL: Developer Home Site	Is this your site, a third-party site, an info site, or a community site?
URL: Buy Page or Registration Page	We need the URL as it will appear on Real.com.
URL: Related Websites	For example fan sites, cheats, technical support, etc.
URL: Link to Frequently Asked Questions or self-help support	URL for a user to do some basic game troubleshooting before calling RealNetworks or developer support.

information.	RealNetworks or developer support.
URL: Link to central scores & stats website.	Web page for high score lists, top stats, etc. (if one exists)
EULA File Name	The name of the file for the End User License Agreement. Details about this file will follow.
README File Name	The name of the ReadMe file. Details about this file will follow.
Quick Start File Name	The name of the Quick-Start file. Details about this file will follow.
Game Manual File Name	The name of the Game Manual File. Details about this file will follow.
Known Issues File Name	The name of the Known Issues File. Details about this file will follow.
Hints, Tips & Cheats file name	The name of the Hints, Tips & Cheats file. Details about this file will follow.
Help File Name	The name of the Help file. Details about this file will follow.
Mezzanine Graphic Files	The name of the Mezzanine graphic file. Details about this file will follow.
Catalog Box Art Graphic File	The name of the Catalog Box Art graphic file. Details about this file will follow.

EULA

The EULA is the End User License Agreement, and it dictates what the user agrees to by installing and playing the game. This should be a TXT file. Specifics for what goes into your EULA will depend on your contract. However, we have outlined a sample EULA below:

REALNETWORKS, INC.
END USER LICENSE AGREEMENT
[GAME NAME HERE]

REDISTRIBUTION NOT PERMITTED

Software License for [GAME NAME HERE]

IMPORTANT -- READ CAREFULLY: This License Agreement for [GAME NAME HERE] ("Game") is a legal agreement between you (either an individual or an entity) and RealNetworks, Inc. and the developer of the Game (collectively "RN"). By clicking on the "I Accept" button, installing, copying, playing or otherwise using the Game, you agree to be bound by the terms of this License Agreement. If you do not agree to the terms of this License Agreement, click on the "I Do Not Accept" button and/or do not install the Game.

EXCEPT AS SPECIFICALLY PROVIDED BELOW, THE TERMS OF THIS LICENSE AGREEMENT APPLY TO ALL VERSIONS OF THE GAME, INCLUDING VERSIONS DOWNLOADED OR ACQUIRED WITHOUT CHARGE ("SHAREWARE"), FULL VERSIONS FOR WHICH A FEE IS CHARGED, AND ANY LICENSE KEYS IF APPLICABLE.

THE SHAREWARE VERSION OF THIS GAME MAY CONTAIN USE, FEATURE OR TIME LIMITATIONS. IN ORDER TO REMOVE SUCH LIMITATIONS, YOU MAY PURCHASE THE FULL VERSION OF THE GAME AT WWW.REAL.COM/GAMES.

1. GRANT OF LICENSE. RN hereby grant to you a non-exclusive license to use the Game and Documentation, provided you may: ...

2. LICENSE RESTRICTIONS.

a) You may not...

3. COPIES OF SOFTWARE AND ENHANCEMENTS. If you receive the first copy of the Game electronically ...

4. TITLE. Title, ownership, rights, and intellectual property rights in and to the Game and Documentation shall remain in RN and/or its suppliers...

5. DISCLAIMER OF WARRANTY: THE GAME AND DOCUMENTATION ARE PROVIDED AS IS WITHOUT WARRANTY OF ANY KIND. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, RN FURTHER DISCLAIMS ALL WARRANTIES, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NONINFRINGEMENT. THE ENTIRE RISK ARISING OUT OF THE USE OR PERFORMANCE OF THE GAME AND DOCUMENTATION REMAINS WITH YOU. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL RN OR ITS SUPPLIERS BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR OTHER DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, OR OTHER PECUNIARY LOSS) ARISING OUT OF THIS AGREEMENT OR THE USE OF OR INABILITY TO USE THE GAME, EVEN IF RN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. RN'S SOLE AND EXCLUSIVE LIABILITY TO YOU FOR ACTUAL DIRECT DAMAGES IS LIMITED TO THE FEES YOU PAID FOR THIS GAME. BECAUSE SOME STATES/JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

6. **TERMINATION:** This License Agreement shall terminate automatically if you fail to comply with the limitations described in this license...

7. **U.S. GOVERNMENT RESTRICTED RIGHTS AND EXPORT RESTRICTIONS:** U.S. GOVERNMENT RESTRICTED RIGHTS...

8. **MISCELLANEOUS.** This License Agreement shall constitute the complete and exclusive agreement between us. The terms and conditions contained in this License Agreement may not be modified ...

Copyright (c) 2000 RealNetworks, Inc. and/or its suppliers. 2601 Elliott Ave., Suite 1000, Seattle, Washington 98121 U.S.A. All rights reserved. RealNetworks is a registered trademark of RealNetworks, Inc. Other trademarks are the property of their respective owners.

README File

The Support Tab also includes the README file. Since the console will always shellexec the README file, you may create it in the following formats: TXT, HTML, or RTF. (Please, no PDF files, as the user may not have Adobe Acrobat). Don't forget to include all the "*" items mentioned in the metadata file above. (**Note:** If you choose HTML format, it should be readable in a 640X480 browser window.)

Quick Start File

A TXT or RTF file describing how the game is played, as you might show in a "Read Me First" sheet in a CD game. Should include the objective of the game, how to play the game, keyboard or game controller button mappings, and some general gameplay tips. Also include a "Hot Key" list, which should include the default control keys, quick keys, and function keys. Do not omit any keys from this list, no matter how small their function. See your RN Producer for questions or issues.

Game Manual File

As with the README file, the console will always shellexec the game manual as well. Consequently, the following formats are acceptable: TXT, HTML, or RTF. One of the obvious benefits of using RTF is that you may include illustrations as well, which may be of assistance to the user. However, remember that the more graphics you use in the game manual, the larger your install executable will be. A "Hot Key" list should also be included. This list is an inventory of all the default control keys, quick keys, and function keys. Do not omit any keys from this list, no matter how small their function. See your RN Producer for questions or issues. (**Note:** If you choose HTML format, it should be readable in a 640X480 browser window.)

Known Issues File

A TXT or RTF file that lists all known bugs, compatibility issues (such as problems with certain joysticks, software, etc.), and workarounds for functionality problems. (Frequently Asked Questions acceptable.)

Hints, Tips & Cheats File

A TXT or RTF file that gives all the hints and tips you would give the user, as well as any "cheat" features that allow for hidden functionality. (Note that this can only be accessed from a plus version of the console.)

Help File (Optional)

We will only accept help files as HLP files. If you also have a CNT file (for Win9x Help), you may include that as well. (Please, no CHM files, as this may not be compatible with Win95.)

Mezzanine and Catalog Graphics

We recommend the catalog art be thematic "box cover" type art, and the Mezzanine graphic be a screenshot or screenshot excerpt. For the catalog box art, a graphic of 90x67 is required. For the Mezzanine graphic, an image of 144x108 pixels is required. These must be BMP files, and of the highest quality you can get (at least 24 bit color). They should also be landscape orientation (as opposed to portrait orientation). Note that the art should be laid out to accommodate "stickers" overlaid in its upper-left and upper-right corners (e.g. "New!").

Appendix C: ESD Success Considerations

We've compiled a brief list of the things to consider during development of a game that will ensure its success. There are some general issues regarding the nature of the game, as well as its upsell strategy, which need to be considered during development. Using these guidelines should increase the likelihood of success, both in popularity as well as revenues.

General Considerations

RN's site is focused on marketing to the 140 million users of RealNetworks software. The segment we have focused on is "mainstream gamers," as this base is both the largest as well as the most closely aligned with users of RealNetworks other core products. "Core gamers" are only about 20% of gamers who are the most experienced and are typically the focus of CD Games that have complex design, long learning curves and very long play time. In contrast, games developed for delivery over the Internet to "mainstream gamers" have very different requirements to be successful. Here are a few game design elements to consider when building for this audience:

Size

In general for Internet delivery of downloadable games, **the smaller the download size, the larger your potential audience**. Games that focus on gameplay not continuous new environments are easier to fit into a smaller package and often do better. Examples of this include arena-based racing or fighting games, competitive games such as puzzles, card games or casino simulations.

Learning Curve

Games that do the best also focus on a **quick learning curve**, and consumer expectations for downloadable games are that they can be played without an in-depth reading of a manual. Keep your game intuitive and straightforward.

Depth

If a typical CD Game for \$40 targets 50 hours of linear gameplay, most mainstream gamers never get through the first 10-20 hours. Thus, **trading-off some game depth for a smaller download** is often the right choice.

Price point

We focus on an **introductory price of \$19.95**, and over time as the game ages we reduce this to keep momentum and to stimulate interest.

Game Genres

Unlike the "Core Gamers" segment, the card, casino and puzzle games do very well when marketed to Mainstream gamers over the Internet. Based on several months of data, here is information of total downloads and conversion rates based on genres. These are ranked in order from most popular to least.

Total Downloads	Conversion Rates
1.) Action Games	1) Card Games
2) Puzzle games	2) Casino Games
3) Card Games	3) Puzzle Games
4) Casino Games	4) Action Games
5) Diversions (arcade)	5) Diversions (arcade)
6) Strategy Games	6) Strategy Games
7.) Adventure Games	7) Adventure Games

Upsell Strategies

RealNetworks will work with the game developer to create the appropriate differentiation between the free and the full version of the game and the elements that make it easy for consumers to upgrade. RealNetworks sells games in a variety of genres and has a sophisticated tracking and monitoring system that it uses to understand what works and what does not for converting free customers to paid customers. The best converting games on RN's site perform with 20 to 40 times the upsell rate of the worst converting games, even though the popularity of the games on either end of the spectrum is roughly equal. Obviously, a game must be compelling to convert customers, but even great games will fail in the market due to a poor upsell strategy. We have seen many game developers spend months developing a game and implement the free/upsell strategy in a few days as an afterthought. We will work with the developer on a 1-on-1 basis to ensure maximum return for both companies. Some general guidelines for making a successful free game demo are outlined below:

Length of Gameplay: Don't give away the farm!

The length of gameplay is one of the most important elements of a game's success. The model forged by demos of blockbuster CD ROM games is not necessarily the right fit for games marketed at the broader mainstream market. The demo should give the customer a short, representative sample of what the full game offers. An early marketing survey showed **that the number one reason consumers did not purchase the full version was that they were fully satisfied with the free game experience.** If, however the game demo is too shallow or short, it will adversely affect the viral nature of the game through consumer referrals to other gamers. We have seen very successful games that just give consumer access to only the easiest level of over 30 levels of a game. We have also seen with other games, a frequency cap where the game quit offering gameplay after a 10 to 20 plays. And the number one best converting title simply put a time limit on play such that after 90 seconds into the game it simply stops and prompts for the upsell.

Clearly show what is in the full version

Simply telling customers what they are missing is not effective. A well designed game will allow consumers access to see the environments, features, and functionality they are missing in the actual gameplay, and use a consumers interest as an opportunity to up-sell the full version. One effective strategy for a race demo was allowing the free version play one track completely, but only 30 seconds of each additional track or vehicle. Another method for a puzzle game was offering all the functionality and maps of the full version to be shown, but when a consumer tries to access features of the full version, an upsell dialog pops up. This is annoying, but also very effective.

Keep the gameplay simple

The surest way not to convert a customer is to frustrate them with your demo with either failure to understand how to play, or failure to play well. **Most people sampling demos do not take the time to read instructions.** If the nature of your game is complex, attempt to make the demo components as simple and intuitive as possible. Once they buy the full version they will be more committed and much more likely to read the instructions. Also, keep the gameplay relatively easy to master in the free demo. Tell them through screen shots or text how much more challenging the full version is, but do not make them fail to conquer the demo easily. Make them buy the full version to prove how good they are.

Make it easy to Upgrade

Remember...the demo is free. **It is rare to find a game demo that tries too hard to upsell a consumer.** These constant reminders are effective in keeping it fresh in their mind that they are missing the full experience. Plus, it provides an easy one-click method for upgrading, and is an incentive in itself...no more annoying reminders. Your job is to get the customers there. Potential nag points are:

- Game launch entry screen

- Game exit screen
- Main menu item
- Pop-up reminders when consumers try to access full version features
- Within the help files

Cool factor does not sell

Unfortunately, selling cool factors that do not materially affect gameplay is not effective. **Most consumers will not pay for things such as new paint styles on cars, new color schemes in puzzles, or extra sound files.**

Examples of Good and Bad Methods

For your information, we've compiled a brief list of some good and bad examples of how to get people to download your game, as well as purchase.

Puzzle game

Good: This game offered consumers just the first of 20 levels. The level was surprisingly easy and could be mastered in about 10 to 15 minutes of play time. It had variable scores so a person could get better scores each time they played the level, but they were not allowed to any other levels. This game's first level was easy to get started (no reading of complex instructions) and a consumer could see their score improving and felt a quick mastery of that level.

Bad: This game was a great game but a horrible conversion rate to the full version. The demo consisted of 4 of a possible 20 levels. The levels were chosen from various difficulty levels including one of the hardest levels. The developers logic was that the harder levels would prove how challenging the game was and show off the cool graphics and game pieces in the harder levels. One of two outcomes was most common. One set of consumers never got past the demos second level and grew frustrated with the difficulty (it jumped from easy directly to very hard), and thus would not consider paying money to be more frustrated. Another set of consumers enjoyed the game and its challenging levels, but were fully satisfied with the demo and would not pay to get more of the same type of play. They later removed all but the simplest level and conversion rate more than tripled.

Race Game

Good: This race game had a single track that was fairly easy to master and after about 30 minutes of play, a typical consumer could get first prize. The game went on to offer 5 other tracks, but only allowed the consumer to race for 30 seconds on these before halting gameplay and prompting for the consumer to buy the full version.

Bad: Another great race game demo was a single track that was fairly easy to master. This game however only mentioned in the marketing info that there were more tracks that offered greater challenge. It was also difficult to find where they needed to go to get the full version. Consequently this game was a very poor seller in spite of being a very popular demo.

Card Game

Good: The most successful game on a conversion basis was a card game. This game offered all the different card games to in the demo that the full version had. The demo would allow the consumer to play eight times with each of the games. The ninth time, instead of starting the game, it would pop up an upsell message. It was also riddled with upsell messages at the beginning, during gameplay and at the end of the games.

Bad: The free demo of this game offered a complete card game experience. The full version of the game offered advanced features for advanced players. This failed to convert many users to the full version, as advanced players were only a small minority of the users.

Shooter Game

Good: This game offered a complete gaming experience that was focused around multiplayer. The free version only had 3 of the 10 “maps”. If a user was playing a multiplayer game on a server and the leader switched to a map not included in the free version, a message popped up prompting them to get the full version. It also allowed them to see all the games being played on maps in the free game as well as the full game.

Bad: This game had all the levels in the free version that were in the full version. The upsell was a patch that enabled the player to have more weapons and powers. This was a good concept, but there were already more weapons than the typical user could handle and there were no easy ways to communicate their availability other than with a text link in the main menu. Consequently, most people who downloaded the free version were fully satisfied with the free version. This was the all-time worst converting game.

Measuring Success

Gauging the success for your upsell strategy will only come during the post-release phase. For details on how we measure the success of your game, please see *Upsell Optimization*, page 17.

Appendix D: Quality Assurance

QA Responsibilities

In general the breakdown of QA responsibilities between the developer/publisher and RN is as follows (subject to the terms of the license agreement).

The game developer/publisher:

- Ensures thorough and comprehensive functionality and compatibility testing prior to the Alpha submittal to RealNetworks and before each subsequent milestone (i.e. beta and final release)
- Ensures that the game meets RN defect density requirements prior to the Alpha submittal and before each subsequent milestone.
- Delivers bits in their final format for each major milestone, starting at Alpha (i.e. no raw data, debug versions, special setup required, etc.).
- Ensures defects found during Final QA Acceptance testing are resolved in a timely fashion prior to release.

RealNetworks QA team:

- Evaluates games for milestone acceptance, starting at Alpha (if applicable).
- Runs single-pass stability and functionality test at each milestone, starting at Alpha.
- Runs comprehensive final acceptance and release test pass when the final bits are delivered.

Timelines

When submitting your tested game, please keep in mind the following time constraints on your deliverable:

- **Milestone Acceptance** – After delivering your milestone build, please **allow 10 days from delivery** of a development milestone for the completion of milestone acceptance QA. During that time, critical bugs found will need to be fixed and new builds submitted for retesting.
- **Pre-Release Testing** – A RealArcade installable, launchable, and branded build of the game that incorporates any branding, links, console API functionality, and other RealArcade-specific functionality should be delivered **no later than 4 weeks** prior to the game's schedule release date. This is done so the RN QA teams can help identify any bugs or corrections necessary in these areas with ample time to make changes prior to the delivery of the first RC build.
- **Final Acceptance** – The first Release Candidate (RC) build should be delivered **no later than 2 weeks** prior to the game's scheduled release date to allow completion of Final Acceptance testing and any last minute corrections to the game prior to release.

Q/A Acceptance

RealNetworks will perform some formal QA on every title, but it is ultimately up to the developer to test his/her game. RN will only provide some light QA testing at various milestones, and more in-depth tests upon Alpha, Beta, and the RC build. However, the onus is on the developer to thoroughly test the product before it is a release candidate. Bear in mind that you need to deliver not only a bug free game, but we need all the game profile data as well. **If we are missing Game Profile Data for your game, you did not give us a release candidate.** This may sound picky, but if we don't have the info, we can't integrate you into the console. If we can't integrate you into the console, then it's not really a test of the user experience.

Product Testing Guidelines

For functionality and compatibility testing, there is a certain baseline of coverage that, while not required, is strongly recommended to avoid build rejections and costly release delays. This is a general approach, and additional testing will very likely be necessary for your game depending upon the complexity, technology, and features of a given game. As always, developers should determine how these apply to a specific game. Below are general outlines for these areas:

Functionality Testing Guidelines

- Full functionality test should be performed separately on Free and Full versions.
- All features and functions should be systematically exercised on each new build. In particular, the following areas are often found to be buggy, and special attention should be paid to:
 - Video Display Modes
 - Save/Load
 - Control Customization
 - Polygon clipping
 - Collision Detection
 - Computer AI difficulty and pathfinding
 - Victory conditions
 - Game State changes during gameplay (gameplay logic)
 - Entry and Exit to windows while game is running (alt-tab/alt-esc)
 - “Transitions” from menus to gameplay, movie to gameplay, and level/area to level/area
 - Game launch and exit
 - Console API integration
- All game media should be systematically checked for integrity before and after incorporation in-game.
- Consumer usability testing should be executed to get user perspective on game function, interface, usability, and game difficulty.
- End-to-end gameplay test passes should be run regularly to ensure the user can complete the game.
- Performance benchmarking in the following key areas:
 - Game Launch
 - Game Exit
 - Level/Area Load
 - Movie/Transition Load
 - Menu Transitions
 - Minimum PC Specification Frame-rate (at lowest game settings)
 - Frame-rates at all resolutions on recommended PC spec and high-end PC spec
 - Frame-rate at maximum game settings (max resource draw)
 - Maximum memory footprint while running
 - Maximum install footprint
- Documentation should be checked carefully for grammar, spelling, completeness, and usability.

Compatibility Testing Expectations

The goal of compatibility testing would be to ensure that **the game runs well on 80% of qualifying hardware configurations** in the PC marketplace. Remember that hardware penetration lags introduction, so testing on the newest and latest components are not going to net 80% results. Usually testing on components that are 1-2 generations old will net better coverage.

- Test on 80% sample of discrete hardware components:
 - Video Cards
 - 3D Accelerator Cards

- o Sound Cards
 - o Modems
 - o Input Devices
- Test on 80% sample of popular hardware “package” systems from:
 - o Compaq
 - o Dell
 - o Gateway
 - o NEC
 - o Packard Bell
 - o Etc.
- Test hardware and OS compatibility on appropriate OS’s and OS versions:
 - o Win 95 (Gold, B, C)
 - o Win 98 (Gold, SE, SP2, ME)
 - o Windows ME
 - o Win 2k Workstation (Gold)

Multiplayer Testing Expectations

If your game supports multiplayer online and/or LAN play the following additional tests are important:

- Full functionality test should be performed separately on Free and Full versions.
- Free and Full version multiplayer interaction and matchmaking.
- All features and functions should be systematically exercised on each new build. In particular, the following areas are often found to be buggy, and special attention should be paid:
 - o Latency handling, performance at baseline/max loss/min loss
 - o Game Launch (direct and lobby)
 - o Slow PC vs. Fast PC and fast connection vs. slow connection synching
 - o Max players in single game instance (function and performance)
 - o Protocol support (IPX vs. TCP/IP)
 - o Firewall and Proxy Server support
 - o AutoUpdate
 - o Mismatched data between players
 - o Cheat protection (data hacking, padding, packet filters, trainers, bots, and multiple account creation)
- Widespread (10,000+ users) consumer beta testing should be run to test the following:
 - o Peak Load Handling
 - o Long-term stability
 - o Server maintenance scope
 - o Usability
 - o Community potential
 - o Performance/Function on consumer PC configurations (varied, to say the least)
 - o Cheat vulnerability
 - o Community support services stability and scope

Milestone Acceptance Checklist

Listed below is a checklist for each milestone that you can use when developing your game. Each of these should be met before the game passes on to the next milestone. However, all of these milestones may not apply to all products. Most products for which they DO apply will have, in addition to the general criteria below, specific feature and function criteria written specifically to that product.

Pre-Alpha

- No “blocking” bugs that hinder QA access to milestone functionality.
- Developer open bug list reviewed by RN Producer.
- All defined pre-alpha functionality present and testable.
- Game-specific Pre-Alpha acceptance test plan completed and resultant bugs triaged.

Alpha

- No “blocking” bugs that hinder QA access to milestone functionality.
- All known crashing or hanging bugs from pre-alpha testing are fixed and verified.
- Developer open bug list reviewed by RN Producer.
- All major game functionality present and testable, game playable from start to finish.
- All appropriate RealArcade integration features present and testable (including all Game Profile Data).
- Game is available as a “Demo” and a “Full” version with appropriate features and functions in each including upgrade mechanism.
- List of missing functionality provided to RN Producer and reviewed.
- Game-specific Alpha acceptance test plan completed and resultant bugs triaged.
- All content issues addressed (privacy, COPPA, etc.)

Beta

- No “blocking” bugs that hinder QA access to milestone functionality.
- All known crashing or hanging bugs from Alpha testing are fixed and verified.
- Developer open bug list reviewed by RN Producer.
- Remaining unimplemented functionality discussed and scheduled for post-release incorporation or cut.
- Game satisfies “minimum feature-set for release” criteria agreed upon prior to Beta delivery.
- All game functionality present and testable, game playable from start to finish.
- RealNetworks branding, upsell messaging, upsell function, console integration, links, and other RealArcade-specific functionality is final and bug-free.
- All documentation and game information complete and incorporated.
- Game-specific Beta acceptance test plan completed and resultant bugs triaged.

Release Candidate / Release-to-Web

- Game is feature complete, and ALL known bugs are resolved (fixed, closed, or postponed)
- Game-specific final acceptance test plan completed and resultant bugs resolved
- Complete and final bits packages for Free and Full versions are in the RN Producer’s possession
- All necessary support staff, support systems, and other back-end functionality is in place and ready to receive customer traffic.

Submission and Resubmission

All build submission and resubmission should be handled via electronic transfer to the RN FTP site. Your RN Producer will help guide you and provide support for this submission process. Please e-mail your RN Producer

when you begin file transfer of a game build or milestone, and again when the transfer is complete so that the Producer can review and forward the files to the appropriate QA staff as soon as possible. In the event that a submission fails either through a bad transfer, lost files, or bugs found that need fixing – resubmission is handled the exact same way as initial submission, with new bits as necessary. Work with your RN Producer to clarify any release schedule or development schedule revisions required (if any) due to delays in receiving “final” bits.

Bug Reporting

Bugs will be entered and tracked in RN’s in-house bug database. These bugs will be triaged and reported through your assigned RN Producer. If you have any concerns about bug quality, quantity, clarification, or prioritization, please feel free to discuss these concerns with your Producer and he will address these concerns with the RN QA team.

Appendix E: Glossary

In order to understand some of the terminology used throughout this manual, we have included a section to acquaint you with these terms.

Console, The

The console is another term for the RealArcade interface. Also, the “virtual game console” is a synonym for “the console.”

Conversion Rate

The conversion rate of a game is one of the key determining factors in the success of a game. A conversion rate refers to the ratio of the number of free version downloads compared to the number of full versions sold. For example, if 1,000 users download your game in 1 week, and 50 decide to purchase the game, then the conversion rate for your game is 5%. Usually, a conversion rate between 3% and 5% is good (although higher is, of course, better). Another statistic is “Dollars-per-Download,” which is the total revenue from a game divided by the total free downloads for that game. However, the bottom line is revenue. If your conversion rate is 15% (exceptionally good), but only 100 people download your game a month, then the game’s revenues would be quite low. In this example, your game would not be as successful as it could be. Remember that your Producer is there to help you to optimize the overall revenues.

COPPA

For complete information on COPPA compliance, please go to <http://coppa.org/>. The following information was taken from their site, “The Children's Online Privacy Protection Act (COPPA) was passed by Congress in October 1998, with a requirement that the Federal Trade Commission (FTC) issue and enforce rules concerning children's online privacy. The primary goal of the Act and the Rule is to place parents in control over what information is collected from their children online. The Rule is to place parents in control over what information is collected from their children online. The Rule was designed to be strong, yet flexible, to protect children while recognizing the dynamic nature of the Internet. In addition, the Rule prohibits operators from conditioning a child's participation in an online activity on the child's providing more information than is reasonably necessary to participate in that activity.” For more information in this document, please see *COPPA* on page 24.

Digital Rights Management (DRM)

As of Beta 2, RealNetworks plans to implement a key validation system using Digital Rights Management technology (DRM). This involves a client application that will be bundled with the console. When a user wants to purchase the game, a client will take their financial information locally on their computer. Once connected to the Internet, the client will automatically send this information to RN’s servers, and if the transaction proceeds without error, it will send the license certificate to the DRM client. The client will then “unlock” the game. All of this will be performed “under the covers,” eliminating the problems users typically have with obtaining the key or entering the registration code. This also decreases the opportunity for bootleg copies of full games.

ESRB

Before releasing a game, RealNetworks requires the game be ESRB rated. The ESRB (Entertainment Software Ratings Board) will rate the content of your game based on its appropriateness for different segments of the population. It is important to note that **RealNetworks will not release any game/site rated for adults only**. For more information about the ESRB, as well as submission information, please go to: <http://www.esrb.org/>.

EULA

The EULA is the End User License Agreement, and it dictates what the user agrees to by installing and playing the game. This should be a TXT file. Specifics for what goes into your EULA will depend on your contract.

Exclusive Titles

All games that are sold exclusively through RN are exclusive titles.

Game Mezzanine

Several times in this manual, you will read references to a “Game Mezzanine.” This refers to a window on the console that “slides” open when a user selects a particular game. This window, or “mezzanine,” gives the user access to the core functions of the product, namely downloading games, purchasing games, and viewing the Game Profile Data. Furthermore, the user can perform a variety of different tasks, including previewing the game, reading reviews, and visiting other virtual communities on the game. Below is a screen-shot of the RealArcade Game Mezzanine.



Game Profile Data (GPD)

This refers to the MetaData that is created for all games so that they can work in conjunction with the console. More than just the game and its supporting DLLs, this is also various XML files that allow the user to review, access and purchase the game through the console as well as view the game instruction manual, hints and tips, support information, keyboard shortcuts, related game URLs, etc. (Currently, we create the XML files, but you supply us with the data for these files.)

Non-Exclusive Titles

All titles that are not sold exclusively through RN are non-exclusive titles.

RealArcade

RealArcade is a game management system and virtual game console that enhances the experience of playing PC games and acquiring new ones. When a user launches RealArcade, it allows the user to easily browse and manage his or her PC game collection.

RealArcade Game Packager

RN provides the developer with the best game packager for RealArcade. This product allows both an increase in compression, combined with a seamless and uniform installation experience. All new exclusive titles will be required to use the RealArcade Game Packager. If your title is older or non-exclusive, we recommend using the game packager, although, it is not required. By using this free utility, you can take advantage of the following benefits:

- Significant reduction in download size using Real’s new XZIP technology.
- Built-in decompression, unpackaging, and installation capabilities of RealArcade.
- Automatically meet all of the RN installation requirements listed below.
- Automatically take advantage of RN’s AutoUpdate capabilities.
- Give the user a consistent and simple way of installing your game through the console.

Release Candidate (RC)

Sometimes called an “RC,” a release candidate is a build of a product that the developer believes is fit for release on the market. Specifically, it should be code complete, feature complete, all graphic and UI elements in order, and no critical or show-stopping bugs to report. After heavy QA, an RC may not turn out to be the final release candidate, but it should require heavy testing of an RC before it is sent back for development. As a developer, if you call something an RC, you’re saying that you don’t think RN’s QA should find any critical bugs with it.

It is important to note that you are ultimately responsible for QA of all builds, milestones, and release candidates. RealNetworks will do some QA, with more extensive QA for the release candidate, but we expect to work with the Developer in making this game the best it can be.

Release Date

The date we release your game is the release date. RealNetworks releases new titles on the 2nd Wednesday of each month. Preparation and logistic coordination of launch takes approximately 6-8 weeks from the date of game completion. This allows time for final acceptance testing, entry into e-commerce system, collection of Game Profile Data, completion of title-related web and HTML content, and Tech. Support/Customer Service setup. This also gives the developer time to complete the tasks associated with integrating into RealArcade. Thus, a title completed at the beginning of January will likely release in Mid-February.

Release-to-Web (RTW)

This refers to the date we publish your game on our site. The RTW date should be the same date as the release date, (and certainly never before).

RN

RN is short for RealNetworks.

Slot Date

A slot date is a date when certain games are planned for release. Thus, your release date will always coincide with a slot date, as we will release your game at the same time we release other games.

XZIP

RealNetworks has exclusive rights to finest compression technology available. Specifically, RN’s XZIP compression allows for faster download times for users. If you want to use XZIP to package your games, use the RealArcade Game Packager. See your producer for details.

Appendix F: Contact Information

First Point of Contact

If you've already been approved to make games for RealNetworks, the first point of contact should always be your Producer. He or she is most qualified to know where your issues should be directed. In the event you have an emergency and your Real Producer is not available, you may contact others in this list.

Submission/Approval

RealNetworks business development (Game submissions, approvals, release):
Contact gamesubmission@real.com for questions and more information.

Biz/Dev Relations

Ted Woolsey, Lead Product Manager – twoolsey@real.com

Production Contacts

David Nixon
Producer, Games Group
Dnixon@real.com
ICQ# 73563389

Brad Lyons
Associate Producer, Games Group
Blyons@real.com
ICQ# 2440944

Developer Relations

Andrew Johnston
Group Manager, Real.com Games
mailto:ajohnston@real.com

SDK/API Bugs or Issues (RealArcade Only)

Doug Cohol
Group Program Manager, Games Group
Dcohol@real.com

QA Contacts

In some cases it may be necessary for a developer's engineers or QA team members to interface directly with the RN QA testers for bug isolation, feedback, and resolution. In this circumstances, your RN Producer will provide you with contact information for the relevant QA lead or tester.

LithTech SDK and Engine Support

If you have a question or problem with the LT-ESD SDK and engine, send an e-mail message with a description of your question or problem to esd-support@lithtech.com. Note that **RN will not handle any technical issues regarding LithTech.**

Developer resources for users of the Binary and Source LithTech SDK are now combined at <http://devnet.lithtech.com/>. You will find:

- Documentation
- Mailing list archives
- SDK updates
- File drops
- Technical information
- Contact information

- Licensing information
- Game Tool and Source downloads
- Web-based troubleshooting and discussion forums
- Mailing list archives

Access to this site is restricted via password authentication. To get access to the site or have access granted to your team members, contact support@lithtech.com.

LithTech Developer Mailing List

The LTDev mailing list is one of LithTech's front lines of support. Its members include almost all of the licensee teams, all of the LithTech engineers, and many of the Monolith game engineers. Asking questions here provides the widest range of expertise for answers and sometimes the quickest response, depending on the question. Also, questions answered here benefit the person who asked and also the others on the list. The list focuses on code, but also handles a variety of level design, modeling, and 2D art issues as well. Traffic is usually fairly low, and the list is also available as a digest. Contact eso-support@lithtech.com for information on subscribing team members to the LTDev list.

Additional Support via Email

Another mailing address at Monolith for support is support@lithtech.com. This resource should be used mainly for questions about non-ESD versions of the SDK and engine, questions that are too sensitive for the LTDev mailing list, or extremely urgent questions where esd-support@lithtech.com has proved unsuccessful.