



Podcast Producer and Rich Media Distribution

Best Practices and Tips for Enterprise Deployments

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Executive Summary

“Ever since podcasting was introduced, the question has been the same: Will anyone listen? The answer is definitely ‘Yes.’ eMarketer estimates that the total U.S. podcast audience will rise to 65 million in 2012.”

— **“Heard the Latest About Podcasting?”**
eMarketer, February 4, 2008

Podcasting is an ideal communication medium for large organizations because of its low cost, ease of use, worldwide distribution capabilities, convenience, and mobility. As a result, podcasting is rapidly becoming an attractive way for enterprises to reach internal and external audiences. Enterprises can increase revenues by distributing vital content to sales teams and clients worldwide. And they can reduce costs by delivering internal communications, such as HR training or new-employee orientation, in an affordable, convenient way.

The popularity of podcasting is soaring. In 2004, only 28 people searched for the terms “podcast” or “podcasting” using the Google search engine. In 2007, these terms received 98 million hits on Google, underscoring the tremendous popularity and explosive growth of this new way to publish and experience content. Today, roughly 30 million people around the world subscribe to podcasts, and the upward trend is likely to continue.*

The term “podcast” is a combination of the words “iPod” and “broadcast.” The term was coined because Apple’s iPod is the brand of portable media player for which the first mobile broadcasts were developed. Today, Apple is delivering a complete, end-to-end solution for creating, encoding, publishing, and delivering podcasts.

What Is Podcast Producer?

Podcasting is a very attractive method for reaching a large mobile audience, but to date, it has been difficult for companies to manage the number of podcasts within the organization and also enable groups or individuals to create their own podcast content. Podcast Producer, a new application included in Mac OS X Server version 10.5 Leopard, is a video capture, processing, and publishing system that automates the process of creating and publishing podcasts while enabling users to produce content based on preapproved workflows. These workflows provide the “glue” that automates the tasks of encoding and publishing podcasts and piping content from one step to the next. Using Podcast Producer, enterprises can efficiently create, encode, publish, and distribute high-quality podcasts on a large scale that are accessible by virtually any device—through iTunes on a Mac or PC, through iPod and iPhone, or with MP3 players and cellular phones. And organizations can maintain control over the distribution of and access to their produced content.

Why Podcast?

A powerful and easy way to communicate with external audiences, podcasts can deliver everything from product demonstrations and sales presentations to reseller training and PR announcements. The benefit of using podcasting for all of these types of communications is that little ramp-up time is required for enterprises, and users require virtually no training.

Podcasts are also perfect for internal-facing communications, including employee training, HR policy updates, safety bulletins, focus groups, brainstorming meetings, distribution of sales materials to field reps to help them increase sales, and other communications. Because podcasts support any number of media types, they are perfect for sharing and reviewing video. Imagine a motion graphics agency looking for an easy way to share clips with clients, such as dailies of television spots. Or picture a field sales force that needs to share its most successful pitches internally to become more effective and close more deals. Podcasting is the ideal solution. Instead of sending a static presentation deck, salespeople can share their pitches with colleagues around the world, complete with audio and video, to clearly convey what's working best in the field.

Debunking the Myths About Podcast Producer

You may think that:	But in reality:
A podcast is a specific content type.	A podcast can consist of virtually any media type or format wrapped in XML (Extensible Markup Language) and delivered via a weblog or RSS feed.
With Podcast Producer, Apple hosts your content files and RSS feeds.	You can host your own podcasts in-house. If you are using iTunes to play your content, Apple simply provides a link back to the servers that are hosting the content.
Use of iTunes is mandatory.	You can use a web browser or any RSS-compliant software to view podcast content. Depending on the encoding format that you've chosen for your podcast, people can view it on virtually any device.
You have to go to the iTunes Store to access podcasts.	The iTunes Store and the iTunes client software application are distinct from each other, and it is not mandatory to use either one to deliver podcast content. If you elect to use the iTunes client software to deliver podcasts to users, you can set policies to block users from accessing the iTunes Store if you wish. The iTunes application can act as a podcast viewer and the gateway to sync podcasts to a mobile device such as iPod, iPod touch, or iPhone.
Podcasts aren't secure.	You control access to content by both internal and external users using your directory services system, and you can monitor who is accessing content with the Podcast Producer logs.

Podcast Producer in Depth

Podcast Producer: The Architecture

This white paper includes a high-level overview of the components of a Podcast Producer solution. For more detail, please refer to *Mac OS X Server: Podcast Producer Administration for Version 10.5 Leopard* at http://images.apple.com/server/macosx/docs/Podcast_Producer_Admin_v10.5.pdf.

- Podcast Producer server, the server-based portion of the solution, comes at no additional charge as part of Leopard Server. It is the behind-the-scenes engine that automatically encodes, publishes, and distributes podcasts. Podcast Producer server manages camera capture agents, provides access control and centralized management, and accepts QuickTime movies and other media files to be processed on an Xgrid cluster.
- Podcast Capture (located in the Utilities folder in the Applications folder) is a new application in Mac OS X version 10.5 Leopard that enables individuals to create podcasts using video from local and remote cameras, audio, screen captures, and existing content. Podcast Capture can also be used to upload QuickTime movies for processing by the Podcast Producer server. Podcast Capture ships on every Mac and with every copy of Leopard.

There are several ways to access Podcast Capture. The Podcast Capture tool is accessible through the Podcast Capture user interface and also through the podcast command-line tool `/usr/bin/podcast` or `usr/bin/pcast`. You can also call the encoding and publishing tools directly using the `pcastaction` command.

Podcast Producer: The Process

Think of a podcasting system as a way for people to generate content on their own, have it encoded and processed by a predetermined workflow, and then have it available for users to access using a subscription-based model. Different topics or content groups can be thought of as channels that a user can access with a login ID. With iTunes or another RSS reader, or by viewing them online using a web browser, users can download a single episode or watch the podcast using real-time playback via streaming media.

As an IT professional, you specify which content people can receive by setting access levels and permissions within your internal enterprise directory.

These steps provide a general outline of how the process works:

1. Users and content experts use Podcast Capture, a client application available in Mac OS X Leopard, to remotely or locally record audio, video, or screen activity. Or they can directly submit any content, including QuickTime movies, to the Podcast Producer server. Remotely recorded audio or video is automatically submitted to the Podcast Producer server.
2. Users select a workflow that they have rights to (as an IT administrator, you control each user's access) within Podcast Capture. Each workflow represents a channel or feed. Every workflow specifies the entire process, including the file format encoding for

The Podcast Producer application API is open, enabling other vendors to extend its functionality. This provides new possibilities for supporting additional formats and workflows.

Groundbreaking Workflow Applications Made Possible by New Software Development Kits (SDKs)

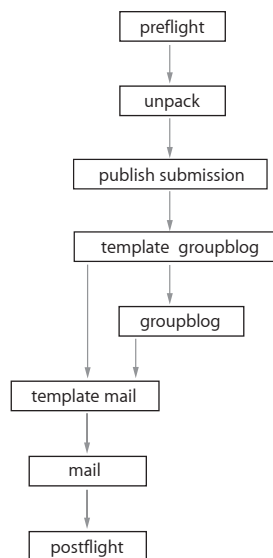
Apple has introduced new podcasting SDKs for the iPhone and iPod touch, removing the barriers to creating exciting new podcasting workflow applications that tie back to your workflows. Using these SDKs, you can create a custom media delivery interface for playing content on a client device such as iPhone or iPod touch. Imagine being able to load content onto a device and securely update it at a determined interval for delivery to your intended audiences. You could use an iPod touch or iPhone to walk museum-goers through a guided tour or to deliver a guided presentation of your latest pharmaceutical offerings to physicians. Now you can own your own channel for communicating with sales teams, engineers, developers, or clients.

each podcast, who will have access to the podcast, and the output devices that will access the podcast. This can be as simple as creating one program or channel of content and encoding it for a single media output such as iPod; or it can be as complex as creating several channels and encoding the content for multiple outputs such as iPod, iPhone, web streaming, and MP3 audio.

3. Podcast Producer server accepts the content submission and sends it to an Xgrid distributed computing cluster to be processed according to the workflow selected. The distributed clustering solution can scale as more jobs are being sent to the system.
4. When finished encoding and processing, the Xgrid cluster sends email notifications to users with instructions on how to access the newly created podcast.
5. Viewers use iTunes or a standard web browser to access the podcast and download it to a Windows or Mac computer, MP3 player, iPhone, iPod, or Apple TV.

Podcast Producer Workflows

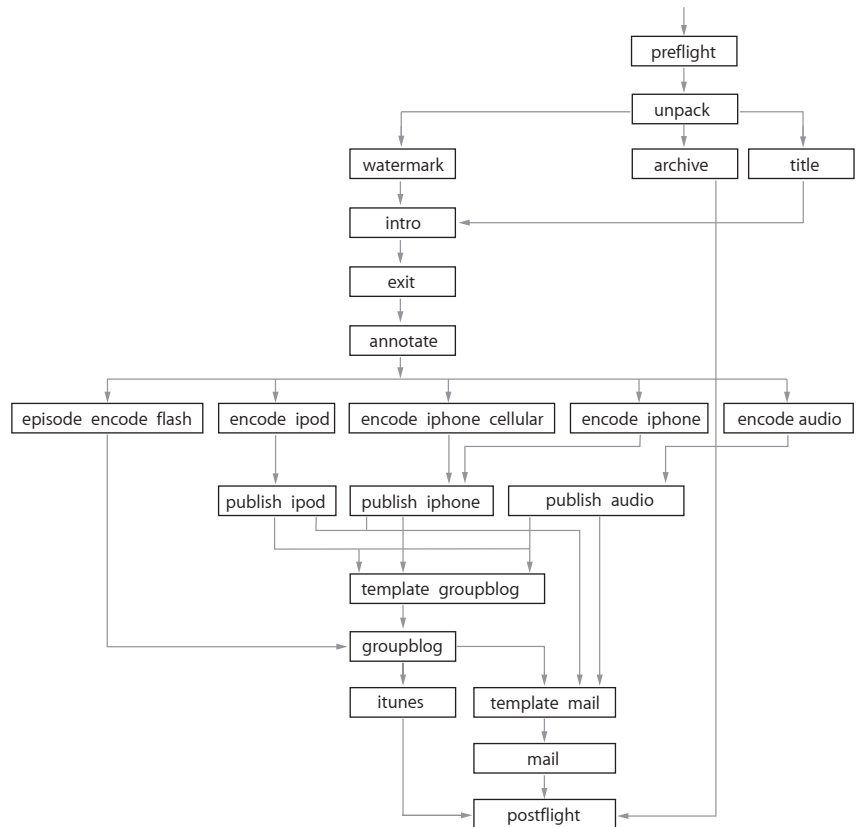
Podcast Producer offers a number of workflows for processing podcasts. You can use a simple workflow and a single channel or program that delivers your finished content in just one media format, such as in the example below:



The workflows that automate processing and encoding of podcasts are critical to success with your in-house podcasting solution. It helps to start small with a single-server podcasting solution so that you can pinpoint any issues with individual workflows and resolve them before implementing a larger, more complex solution.

Or you can, for instance, use a single channel of specific content, but deliver it to multiple output formats, as shown in the workflow below.

Podcast Producer can also accommodate more complex workflows. Podcast Producer has an open architecture. Using tools that are included at no charge with Leopard Server, you can post content dynamically to a web front end if you want to customize your workflows even further.



Best Practices for Implementing Podcast Producer

In enterprise environments, deploying a solution based on Podcast Producer requires proper configuration of several servers. Apple can provide a fully integrated solution that delivers all the services required, such as integration with your Domain Name Server (DNS) and your directory server for authenticating users and determining access levels.

You might also configure your podcasting solution to work with your web-based calendaring system to automatically inform people of the specific days and times when new episodes are available. In addition, you need to enable Xgrid distributed processing to process and encode podcasts.

Many resources are available to guide you while implementing Podcast Producer within your organization. *Mac OS X Server: Podcast Producer Administration for Version 10.5 Leopard* at http://images.apple.com/server/macosx/docs/Podcast_Producer_Admin_v10.5.pdf is a good place to start. Here are some additional best practices and caveats to keep in mind when implementing Podcast Producer in enterprise environments.

Adding Support for Flash and Windows Media

Podcast Producer supports a number of formats for podcasts, including H.264, MPEG-4, MP3, and AAC audio. In fact, any format that QuickTime supports can be added to your Podcast Producer workflow. However, there are some formats for which Apple does not provide codecs.

Telestream has adapted its media transcoding application, Episode, specifically for Podcast Producer. Episode Podcast is a third-party plug-in solution to enhance Podcast Producer with new workflows and codecs that generate Windows Media and Adobe Flash files. Like the Telestream plug-in for Apple's Compressor, Episode Podcast is fully integrated into the production workflow and can be executed alongside all of the other jobs you submit to Podcast Producer.

Scaling and Accelerating Your Podcast Workflow

Before you set up Podcast Producer, consider the scale of your implementation and the complexity of the podcast workflows you will need to use. Let's say, for instance, that you have selected a workflow that will create three versions of a podcast: one for iPod, one for iPhone, and another for streaming live via QuickTime. Each encoding format is considered a thread, and each thread is assigned to a single "core." Each processor typically has four cores.

Following is a list of considerations to keep in mind when deciding the number of cores needed to process QuickTime movies.

- Number of cores available in the grid.
- Number of submissions.
- Number of media types and the codecs selected. Some codes can use up to two cores; other codecs work off of a single core.
- Number of tasks that will need to be performed in parallel.
- Schedule for a typical recording day.

If you are in an environment that requires fast turnarounds for podcasts, you may want to consider engaging Apple Professional Services to implement a batch-processing solution that involves splitting your jobs into smaller pieces, distributing them to more cores, and then stitching the jobs back together. By using customized workflows, you can optimize and process more podcasts more efficiently and speed up the distribution of the workflows.

Success with DNS

Keep in mind that if you have an existing DNS infrastructure, it's not necessary to set up a separate DNS server on the Podcast Producer server. If you don't have DNS in place within your organization, you need to set up your DNS service for Podcast Producer. Follow the steps in the proper order as outlined in the manual. Be certain that you have proper forward and reverse DNS entries for your Podcast Producer server; otherwise, Kerberos Network Authentication Services will not work properly.

Setting Up Directory Services

Useful tip: If you decide to create your own workflow or modify one, including specifying the intros, effects, and transitions you'd like to use, you can enter the description of the transitions as two words such as "page flip." However, be sure to enter the descriptions of the effect as one word: "pageflip" not "page flip" to ensure successful processing when you submit your job to Podcast Producer.

Podcast Producer currently integrates directly with Open Directory rather than Active Directory. To simplify Open Directory administration, you may want to configure users by groups instead of by individuals. If an approval workflow is involved, setting up groups is a good idea for podcast submissions. Each submission is attributed to a group rather than an individual, thereby simplifying IT administration.

To create the proper group accounts for wiki, blog, or podcast access, use Open Directory (located in the Utilities folder in the Applications folder) rather than Workgroup Manager. Open Directory creates the proper directory entries with the correct attributes. Note that as you are setting up group user accounts, you must enter each email account into the information tab.

Testimonials

“At Landor, we have been creating brands that transform business for some of the largest companies in the world for over 60 years. We plan on using Podcast Producer to make it possible for our 24 worldwide offices and 850 experts to work more effectively as one. On any given day we may have a dozen meetings in every corner of the planet where we train staff, show breakthrough creative work, or share a client presentation. Every day! For years this great stuff just escaped into the ether, but with Podcast Producer, we can easily capture these moments as they happen and share them, making us a far more intelligent and competitive strategic branding agency.”

— **Spencer Mains, Worldwide Chief Technology Officer, Landor**

Conclusion

Podcast Producer is an ideal solution for enterprises that need to streamline the creation and delivery of strategic communications. It provides an avenue to increase revenues by boosting sales force effectiveness and enhancing client communications. It also allows you to reduce costs and speed delivery of internal communications such as employee training, creative reviews, and more.

With its ability to automate encoding and delivery of podcasts, Podcast Producer lowers the threshold to publishing audio and video content on an enterprise-wide scale. For these reasons and more, podcasting is being rapidly adopted by enterprises that want to both increase revenue and reduce costs. By following a few IT best practices for implementation and maintenance of Podcast Producer, enterprises can reap the substantial benefits of deploying their own in-house solution for podcast programming.

Additional Resources

Apple Resources

Apple Professional Services:
www.apple.com/consulting

Apple Mailing Lists:
<http://lists.apple.com/mailman/listinfo/podcast-producer>

Information about Apple features for podcasting:
www.apple.com/server/macosx/features/podcasts.html

Podcasting for the Enterprise online seminar:
www.seminars.apple.com/seminaronline/podcastproducer/apple/index.html

Tips and Education for Podcasting

Tips for Podcast Fans:
www.apple.com/itunes/store/podcaststips.html

Making a Podcast:
www.apple.com/itunes/store/podcaststechspecs.html

FAQs for Podcast Fans:
www.apple.com/itunes/store/podcastsfaq.html

FAQs for Podcast Makers:
www.apple.com/itunes/store/podcastingfaq.html

Audio Podcast Tutorials

Working with iLife to add music tracks to any project:
www.apple.com/ilife/tutorials/#garageband-podcast-34

Creating a Podcast with GarageBand:
www.apple.com/ilife/tutorials/#garageband-podcast-51

Creating a Podcast with QuickTime Pro on Mac OS X:
www.apple.com/quicktime/tutorials/podcasting.html

Creating a Podcast with QuickTime Pro on Windows:
www.apple.com/quicktime/tutorials/podcasting_win.html

Publishing a Podcast with iWeb:
www.apple.com/ilife/tutorials/#iweb-express-59

Video Podcast Tutorials

Creating a Podcast with QuickTime Pro on Mac OS X:
www.apple.com/quicktime/tutorials/videopodcasts.html

Creating a Podcast with QuickTime Pro on Windows:
www.apple.com/quicktime/tutorials/videopodcasts_win.html

Publishing a Podcast with iWeb:
www.apple.com/ilife/tutorials/#iweb-express

Other Resources

MacLearning:
<http://maclearning.org/>

Episode Podcast:
www.episodepodcast.com/