



Email Infrastructure: VirtualMTA Technology in PowerMTA™

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EXECUTIVE SUMMARY

Today’s enterprise environments need fast, reliable, and immediate execution of email messaging flow. And to successfully achieve greater deliverability, proven technologies need to be in place to optimize the messaging infrastructure. With a commercial grade MTA (Message Transfer Agent) configured properly, you will notice higher efficiency and fewer points of failure ranging from message assembly to successful inbox delivery. Now, as ISPs begin to enforce more stringent delivery policies, messages that are sent through a shared gateway are more likely to be compromised or blocked. As ISPs filter on a particular IP, there is an increased chance that all customers sending from that same IP will be blocked.

VirtualMTA email technology allows senders to control the source IP address for each single message. Each VirtualMTA performs its delivery functions independently; therefore, as long as the source IP is not blacklisted, your message has a higher chance of being routed to the inbox. VirtualMTAs also enhance deliverability by offering highly precise mailing delivery control with options to enable or disable DomainKeys and/or DKIM-based sender authentication and to also configure granular delivery rate shaping parameters on a per domain and/or per email stream basis. Another utility of VirtualMTAs is its ability to create independent queues for different mail streams. Finally, VirtualMTAs help by consolidating servers, reducing manpower, and streamlining email flow.

TODAY’S CHALLENGES

An ever increasing volume of email has prompted many ISPs and system administrators to employ various and more aggressive means to filter out unwanted messages. While their intentions are good, they often result in false positives (legitimate email being blocked or junked). There is a greater propensity for blocked email, especially if the messages are being delivered through a shared email gateway, or if a particular IP has been blacklisted or compromised.

PowerMTA™ allows you to segment a single server into an unlimited number of “VirtualMTAs” and provides several methods for segmenting and routing mail to the appropriate “VirtualMTA.” Each “Virtual MTA” may have its own IP address and delivery policy. Traditionally, all mail sent from a shared gateway or MTA (message transfer agent) is sent from the same host name and IP address. As a result, when ISPs and email administrators filter on the IP or domain of the gateway, the mailings of all customers or departments of a company relaying through the gateway become blocked as well. The solution is to segment your mail streams utilizing different IPs.

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Another challenge for today's marketers is the delivery environment. Since many organizations today do not yet use commercial grade MTAs, additional servers and hardware may be required to control larger volumes of email. Many of these servers tend not to be user friendly due to their lack of delivery policy controls and granular configuration settings. General purpose mail servers often support only one hostname/ip and a single mail queue. Below is an example of this type of set up. In this example, three servers are used to deliver email to the various ISPs. This added hardware dramatically increases costs to your business or organization. The financial cost of many open source mail servers in a virtualized operating system may not be an issue, however it's the operational costs, and overall manageability of such a setup that may be very high.

THE Port25 SOLUTION

Port25 Solutions has solved this problem by adding an advanced, new feature to PowerMTA™, our flagship, market leading, email gateway product. VirtualMTA is innovative technology software that is made especially for large senders and ESPs. This software consolidates these MTAs, creating an easy-to-manage solution that also rapidly reduces costs. Added features allow senders to control both the source IP address and host name for each single message. As a result, each customer, campaign, and/or department can now simultaneously deliver email over their own dedicated, independent virtual gateway. VirtualMTAs enable senders and Email Service Providers (ESPs) to dedicate IPs to individual clients – critical for reputation monitoring and better inbox placement rates. To provide maximum control and flexibility, VirtualMTA's can be selected on a per message basis through a variety of interfaces and also by mappings, (e.g. by source, by header pattern and by x-virtual-mta header value).

The benefits of VirtualMTAs are many. Perhaps most importantly, users can retain the cost and reliability advantages of running a centralized PowerMTA™ delivery gateway. Additional advantages include reduced downtime with far fewer points of failure, and increased deliveries without the risk of losing control or having the entire gateway compromised or "blacklisted". Below is an example of what the VirtualMTA environment looks like. Essentially, one server can look like hundreds of individual servers.

VirtualMTAs: HOW THEY WORK

Each of these servers can be fully customized to have its own configuration and delivery policy settings, including unique IP, unique hostname, and individual per domain settings, such as simultaneous connections, messages and intervals. Additionally, these VirtualMTAs can be pooled together for resource sharing and load balancing, essentially used for time sensitive mailings. When configured in this fashion, VirtualMTAs can handle higher priority emails faster than other email; thus, this feature is especially useful for priority message streams like password resets.

Additionally, PowerMTA™ uses a combination of information from the configuration file, submission interface, and the message itself to control message delivery. As the messages are sent to the PowerMTA gateway through one of the many supported submission methods, they are placed in the appropriate VirtualMTA power queue. Each VirtualMTA then performs its deliveries independently.

The key to the VirtualMTA feature is that the receiving gateway sees the delivering VirtualMTA instance as the source of the message. Therefore, as long as the specific IP address of the VirtualMTA is not “blacklisted,” the message will reach its destination. Further, as long as DNS records are in sync with the VirtualMTA configuration, messages will also pass domain reputation verifications made through a reverse DNS lookup.

In the example below, three different groups are using the same shared delivery gateway to deliver their messages to various destinations. Each group will use a distinct virtual gateway instance within the shared PowerMTA™ gateway, with each having its own IP address and domain name as specified in the configuration file.



SUBMISSION METHODS

Customer messaging gateways invariably require integration with an originating system such as a CRM system or custom mail feeder application. To address your specific integration needs, PowerMTA supports a variety of message submission interfaces:

- Standard submission interface using SMTP
- File-based submission using pickup directory
- Proprietary submission interface through our API (C, C++, Java, Perl)
- Data exports from delivery log (XML, CSV, HTML, etc.)
- API to delivery log (C, Java, Perl)
- Forwarding of inbound messages to file or via local pipe

In the example below, Group #1 is submitting their messages using and SMTP interface. The appropriate VirtualMTA will be selected by mapping the IP address of the submitting interface as defined in the configuration file. Group #2 is also using the SMTP submission interface; however, Group #2's VirtualMTA is defined in a custom header tag in each of its messages. Group #3 is using the C++ Submission API to control PowerMTA™ and has chosen to specify the VirtualMTA mapping through specific function calls.

SUMMARY

The VirtualMTA feature provides significant value from both a business and technology perspective. Some the key benefits include improved deliverability (achieved by minimizing the risk of collateral blocking), and compliance with email policies of recipient domains. Furthermore, by operating from a single shared gateway that performs well on all standard platforms, as well as software that executes brilliantly as multiple independent gateways, you'll enjoy the benefits of far fewer points of failure. Finally, using a software product that provides complete control over message distribution and the ability to deploy millions of messages per hour will cause the cost and flexibility of scaling become obsolete. The most significant advantage of utilizing VirtualMTAs is improved manageability and control of multiple mail streams.

Through advanced functionality, VirtualMTA technology within PowerMTA™ helps to restore confidence in today's digital messaging infrastructure. It allows you to spend less time and money with email infrastructure issues and devote more time focusing on what is important for your enterprise. PowerMTA™ is a key ingredient in the email marketing process, helping you to maintain a positive reputation while maximizing your email delivery rates. PowerMTA™ is delivered as a turnkey, downloadable software package that efficiently operates on a wide range of server hardware platforms.

Leading enterprises and service providers relying on PowerMTA™ include: ExactTarget, SilverPOP, Kayak.com, CareerBuilder, Turner Broadcasting, ServiceMagic, DailyCandy, Bank of America, Listrak, Overstock.com, Emailvision, MySpace.com, Responsys along with many more. PowerMTA™ has been widely-adopted by the global sender community as it easily scales to handle the largest delivery throughput requirements and it was also the first MTA to support major email authentication standards including DomainKeys Identified Mail (commonly known as DKIM). PowerMTA™ also provides customizable bounce handling/reporting and, unlike competing products which are available for Linux or Windows-only environments, performs well with all commonly-used operating systems.

FEATURES

Port25's PowerMTA™ provides the most advanced and flexible functionality for virtual host email delivery. Some of the key features include:

- **Per Message Control of Delivering Host**

PowerMTA™ provides several options that you give you complete control over message distribution. Target VirtualMTA's can be specified on a per message basis through x-header directives, regular expression matching of the SMTP MAIL FROM address, source IP address and/or function calls to the submission API.

- **Bounce Categorization**
PowerMTA™ offers both bounce categorization and the ability to customize bounce settings based on sending experiences. This information can be extracted via CSV format as well as various file transport features so that files can be moved to a location of your choosing for post-processing.
- **Pooling and Load Balancing**
PowerMTA supports the creation of pools of VirtualMTA's that can be used for load-balanced delivery. The current state of the email industry has begun focusing more on time sensitive emails, such as exclusive email alerts from media companies and time sensitive e-commerce related promotions.
- **Real Time Delivery Modifications**
PowerMTA provides real-time monitoring of your sender reputation through SMTP responses received from ISPs. This monitoring produces immediate notification of delivery issues and the ability to stop and adjust delivery settings based on SMTP response patterns.
- **Unlimited Number of VirtualMTAs**
There is no inherent limit to the number of VirtualMTAs that can be created through the full capacity version of PowerMTA™. Practical limits are defined by server hardware and networking resources.
- **Granular Reporting and Monitoring per VirtualMTA**
PowerMTA™'s extensive tracking and reporting features have been extended to provide detailed analysis for each VirtualMTA, including customizable bounce categorization and reporting. PowerMTA™ provides extensive monitoring and reporting tools, including web-based status reporting and delivery monitoring, XML-based delivery statistics reporting, a command-line query and reporting tool, pre-configured performance reports, advanced bounce analysis and real-time campaign tracking.
- **Power Queue**
Delivering 10x more messages per hour than leading open source alternatives and corporate mail systems, Power Queue lies at the heart of PowerMTA. Power Queue is our primary message queuing and delivery engine. It is unique because it was designed from scratch to address the integration, throughput, control and tracking requirements of today's email marketers.
- **Standard Platform Support**
PowerMTA is delivered as a turnkey downloadable software that runs on standard platforms on commodity hardware. The benefit to you is lower cost of operations, and the fact that PowerMTA is easier to support and integrate with existing systems than proprietary appliance architectures. VirtualMTA is part of the standard bundle of PowerMTA™ 3.5, which runs on the existing platforms that you already have in house (Microsoft Windows, Sun Solaris, Linux).



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ABOUT Port25 SOLUTIONS, INC.

Port25 Solutions Inc. provides specialized email infrastructure software products that address the increased unique demands of client communications and email marketing applications. PowerMTA™, Port25's flagship product, provides senders with superior performance and advanced features to proactively manage their sender reputations. Port25's global footprint includes 66% of the leading Email Service Providers as published by Forrester and enterprise level clients such as MySpace, CareerBuilder, and the New York Times. Port25 is a member of the Email Sender and Provider Coalition (ESPC) and MAAWG. Founded in 1999, Port25's mission is to help realize the potential of email as a platform for legitimate and effective customer communications. Visit www.port25.com for a fully featured product evaluation.