

System Monitoring and Logging

in the Revahertz Inc. Interactive Gaming System

for Certification by the Alderney Gambling Control
Commission

**Revahertz
Networks**

← Thinking inside the box.™ →

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Revision History

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SML-01	1/14/04	Draft - released for internal review.	LJP	A. Latzko
SML-02	1/15/04	Incorporated internal review comments.	LJP	A. Latzko
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1. Introduction

System monitoring is a constant presence in the IGS. We use various software utilities to monitor:

- Network status
- Usage statistics
- Data integrity
- Database transactions
- Alert conditions
- Status of external player support resources linked to *LuckyMe* site

This document describes the system monitoring tools and how they are used in Revahertz Inc. Interactive Gaming System (IGS). It also includes a partial list of the routine log files that are generated during daily IGS operations. For details about backups and data recovery, refer to the *Operations Manual*.

1.1 Internal and external monitoring

Most IGS system monitoring concerns the IGS itself, which comprises several sites in Alderney, UK, London, England, UK, Falkirk, Scotland, UK, Memphis, Tennessee, USA, and Cambridge, Massachusetts, USA. Each site contains a number of host systems, connected by a LAN (Local Area Network). The sites are connected by a VPN (Virtual Private Network). *Internal* monitoring refers to the systems within the VPN; *external* monitoring refers to the public Internet. For details about the network design and implementation of the IGS, refer to *Network Design* and *System Design*.

1.2 Terminology

This document uses certain terms to refer to parts of the IGS and the its environment as defined in the following table:

Term	Definition
Channel, or game channel	Currently, we offer two channels: <i>Bingo and Gaming</i> and <i>Wingo Betting</i> TM . <i>Wingo Betting</i> is not part of the IGS, and is not covered in this document.
Customer Care representative	A TSC employee who has access to some of the restricted areas of the IGS, such as player account information, for customer support and maintenance purposes.

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Term	Definition
Game session	One complete game, from start to finish.
Harrah's Interactive Ltd.	A wholly-owned subsidiary of Harrah's Entertainment Inc.
IGS	Interactive Gaming System
Operator, Harrah's Interactive Ltd. Operator	A Harrah's Interactive Ltd. or Harrah's Entertainment Inc. employee who has access to restricted areas of the IGS for maintenance and administrative purposes.
Player	A registered end-user who has subscribed to the IGS and can play one or more of the game offerings. Equivalent to customer or end-user.
Supplier	Revahertz Inc.
VPN	Virtual Private Network, a private data network that makes use of the public telecommunication infrastructure, maintaining privacy through the use of a tunnelling protocol and security procedures.

1.3 Typographical Conventions

The following typographical conventions are used throughout the *Alderney Documentation Set*:

<i>This term...</i>	<i>uses this typeface...</i>
<ul style="list-style-type: none">• New term (first use only)• Title of a document• Emphasis• Product name (software application or utility)	<i>Italic</i>
<ul style="list-style-type: none">• Computer source code• Computer output (to screen)• System name• URL	Fixed-width font
<ul style="list-style-type: none">• Placeholder within computer code; for example, a method's argument(s)• System variable	<i>Fixed-width italic font</i>
<ul style="list-style-type: none">• Command-line user input	Fixed-width bold font
<ul style="list-style-type: none">• Link to another page or site on the Internet	Blue underlined text
<ul style="list-style-type: none">• Excerpt from online text	Sans-serif font

2. Monitoring tools in the IGS

The following section lists the set of software tools used to monitor the IGS, a brief description of each tool, and a brief description of how it can be used with the IGS. Note that these tools are not necessarily all in use at a single given time. Some tools are configured to run automatically at specified intervals, and others are intended to aid in diagnosing problems that might arise during IGS operation.

Tool	Description	IGS use
<i>ACID</i>	Analysis Console for Intrusion Databases (ACID), a PHP-based analysis engine that searches and processes a database of security events generated by various IDSes, firewalls, and network monitoring tools.	Front end for <i>snort</i> , an intrusion detection utility.
<i>cron</i>	Job scheduling utility that schedules individual tasks to be run at specific times throughout the day.	Runs local (to IGS host within network, not network itself) jobs such as writing logged information to files.
<i>ICMP</i> (Internet Control Message Protocol) echo	An extension to the Internet Protocol (IP) defined by RFC 792. The ping command uses ICMP to test an Internet connection.	Tests for internal (VPN) and external (public Internet) network connectivity.
<i>IPSec tunnels</i>	IP Security, a set of protocols developed by the IETF to support secure exchange of packets at the IP layer. Tunnel mode encrypts both the header and the payload of each packet. On the receiving side, an IPSec-compliant device decrypts each packet. The sending and receiving devices must share a public key.	Used to create a VPN (Virtual Private Network) among IGS sites; enables secure inter-site monitoring without relying on local (site-specific) networks.

<i>Tool</i>	<i>Description</i>	<i>IGS use</i>
<i>KeyNote</i> ,	Third party website-monitoring service	<p><i>KeyNote</i> polls the following sites every fifteen minutes to verify that they are up and running:</p> <ul style="list-style-type: none"> • <code>www.luckyme.co.uk</code> • <code>ald-public-www-1.luckyme.co.uk</code> • <code>lon-public-www-1.luckyme.co.uk</code> <p><i>KeyNote</i> tracks the elapsed time between its poll and the target system's response. If they detect any outages, they will notify Revahertz Inc. promptly by email.</p> <p><i>KeyNote</i> provides monthly performance reports to Revahertz Inc. which include statistics for the average response time for each system polled.</p>
<i>logcheck</i>	Tool for analysing log files that is configured to read one or more log files, filter for significant events, and send out an email alert if any such events are present in the specified log files.	Runs every 2 hours on the <i>loghost</i> system and scans the logs of all IGS systems. Any irregularities trigger an email alert message which is sent to the mailing list <code>on-call-eng@revahertz.com</code> .
MD5 checksum	MD5 is a one-way hash function that takes a message (or packet, or file) and converts it into a fixed string of digits (created in 1991 by Professor Ronald Rivest).	Used to generate checksum values to verify data integrity.

Tool	Description	IGS use
<i>mon</i>	An open-source monitoring client/server utility which uses data gathered from SNMP to determine the status of machines. It performs two basic functions: it monitors specific services at specified intervals, and responds to failures by generating alerts. It is highly configurable, and can monitor multiple hosts and services in parallel.	<p>Runs over the local network on an IGS and routinely retrieves the following information:</p> <ul style="list-style-type: none"> • 1- and 5- minute load averages for each host • Network interface statistics, such as comparisons of the traffic between the servers and the switch ports they're on to verify other measurements of bandwidth utilization • Disk utilization, such as file swapping, to watch the file system for overall use, I/O operations per second, and disk read/write throughput from <i>iostat</i>. • Memory utilization for each host • Process count for each host • Processor utilization (different from load average), determined as the delta between 100% and actual as derived from <i>sar</i> for each host • Power level and ambient temperature (data retrieved from Sentry™ Power Tower XL™ sensor) • Presence of water in the machine room on site (data retrieved from Sentry™ Power Tower XL™ sensor). • Logged-in users
<i>MRTG</i> (Multi Router Traffic Grapher)	Utility that generates a graphical display of bandwidth statistics for a specified host.	Part of the System Status report generated by the web-based Customer Care application.
<i>Nessus</i>	Security scanner software that remotely audits a specified network and determines its vulnerability to unauthorized access	Used at site installation to verify that security implementation is successful.

<i>Tool</i>	<i>Description</i>	<i>IGS use</i>
<i>NMAP</i> (Network Mapper)	Open source utility for network exploration or security auditing. <i>NMAP</i> uses raw IP packets and/or port scanning to determine the available hosts on the network, and for each host, the following: <ul style="list-style-type: none"> • Available services (application name and version) offered by the hosts • Operating system (and version) • Type of packet filters/firewalls are in use. 	Used at site installation to verify that security implementation is successful.
<i>NTP</i> (Network Time Protocol)	Utility based on UT (also known as Greenwich Mean Time) for synchronizing system clocks (standalone or networked) to a recognized (objective) public reference clock source.	Runs as a continuous background program on all IGS systems. Sends periodic requests to reference clock, and uses returned data to synchronizes clocks throughout the IGS networks.
<i>QuickPage</i>	UNIX-based client/server software package that uses a modem to send messages to an alphanumeric pager.	Used to notify Engineering Staff when an alert condition occurs; has the advantage of being completely independent of VPN or Internet connectivity.
<i>snort</i>	A Network Intrusion Detection System (NIDS). Analyses network data down to the packet level to detect network attacks.	Generates an alert for any VPN traffic originating from a source not explicitly known.
<i>syslog</i>	Standard UNIX syslog daemon, all systems on the network log in to the loghost.	Runs logging operations.
<i>UT</i>	Universal Time; equivalent to Greenwich Mean Time	Standard time zone for all timestamps within the IGS

3. Alerts and notification

There are three reserved telephone numbers and mailing lists, `oncall@revahertz.com`, `oncall_eng@revahertz.com`, `oncall_eng_mobile@revahertz.com`, `oncall_mobile@revahertz.com`, dedicated to sending alerts and messages to the on-call Engineering Staff. The Revahertz Inc. Engineering Staff maintains a rotating schedule to ensure that a primary on-call engineer, a backup on-call engineer, and an on-call engineering manager are available at all times. A telephone call to one of the on-call numbers also initiates a page to the on-call personnel. Currently, the following basic information is sent to the on-call mailing lists:

- All logs, including normal backup summaries and *cron* reports. Note that any failure modes or alert conditions are extracted and pushed up to the top of the log report.
- Event notifications caused by manual intervention, such as reboots and new device installations.
- Event notifications caused by external sources, such as a power surge or a brief network outage.
- System alerts as defined in *mon* configuration.

4. Log files

Specific parts of the IGS and its database must be logged regularly, to provide evidence in the event of a dispute, and to verify the correct operation of the IGS. Revahertz Inc. Engineer Staff can perform ad-hoc SQL queries to retrieve information from the IGS database upon request.

The bastion hosts log every keystroke within the IGS VPN. The keystroke logs are kept on the bastion hosts in `~/.screen/restricted.{0-n}` (0 designates the most recent file).

Production hosts store their log files on the DNS host *loghost*, which is usually `ald-private-db-backup-1`.

Normal system activity logs collected by *syslog-ng* are kept in `/var/log` on the bastion host or in `/var/log` on the *loghost*, as described above.

Web server logs are kept in `/array0/chroots/{gil,gol}/current/revadata/logs/apache` on *loghost*.

All game play activity is recorded in the MySQL databases. Game play daemons (such as *UKBingoManagerD*) generate their own logs.

Description	Location
PLAYER FUNDS MAINTENANCE	
All deposit, withdrawal, transfer or adjustment transactions	<p>All deposit transactions are maintained in the MySQL database in a combination of tables which are documented in the <i>Database Design</i>. Specifically, the information is in the paymentrelated tables.</p> <p>The data in these tables is either available through an ad-hoc SQL query or normally, it will be used to generate an accounting report. On a routine and scheduled basis, the data is transferred off site and imported into a commercial accounting package called ACCPAC which is used to generate normal reports.</p>
All deposits into player accounts, including an authorisation number, confirmation that the funds have been received from the card issuer, and confirmation that the transaction has been approved.	<p>This information is logged into the database, and is also available from the web-based Customer Care application, under account history (refer to the <i>Complete Functional Description</i> for details about the Customer Care application). Deposit transactions include the date, user ID, transaction or authorization number, and transaction completion status.</p>
TRANSACTION LOGGING	
Off-site transaction logging of all transactions (in conjunction with daily backups of player accounts)	<p>All database transactions are mirrored in nominal real time to a system in a remote data centre.</p> <p>All logs are backed up as part of the normal system backup process, as described in the <i>Operations Manual</i>.</p> <p>Logs are located on the database servers in /array0/chroots/gil/current/revadata/.</p> <p>Raw MySQL logs are in stored in /array0/chroots/mysql/var/lib/mysql/binlog.</p>

Description	Location
DATA RECOVERY	
All transactions involving third party organisations, including Aristotle, Experian, and Quova (used to verify identity, geolocation, and validity of credit/debit cards) and DataCash (which manages all transfers of monies between the IGS and its players).	<p><i>Quova</i></p> <ul style="list-style-type: none"> Diagnostic messages are sent to the file <code>quovaserver.log</code> in the log subdirectory of the Quova installation host. Quova accounting records are kept in <code>quova.acctDirectory</code>, which is defined as <code>\${quova.home}/acct</code>, where <code>\${quova.home} = /revadata/Work/geopoint</code> <p><i>Experian</i></p> <ul style="list-style-type: none"> Transactions are logged in an entry in the MySQL database table <code>user_t</code>, where appropriate. <p><i>Aristotle</i></p> <ul style="list-style-type: none"> Transactions are logged in an entry in the MySQL database table <code>user_t</code>, where appropriate. <p><i>DataCash</i></p> <ul style="list-style-type: none"> Transactions are logged in an entry in the MySQL database tables <code>payment</code> and <code>paymentrequest</code>, where appropriate. <p><i>Note:</i> Information normally obtained from these third-party services can also be retrieved directly from the MySQL database if needed.</p>
RECORDABLE EVENTS	
Changes made by Operators to game parameters.	Operators cannot change game parameters on the fly. Pay tables are released out as part of a controlled change process which requires taking the IGS off-line briefly.
Large wins.	<p>Records of wins are stored in the MySQL database and can be extracted either by ad-hoc SQL queries, or by using ACCPAC to generate summary accounting reports.</p> <p>Raw database transaction files are kept in <code>array0/chroots/mysql/var/lib/mysql/binlog</code>.</p> <p>All wins are also logged in an alternative format in Apache's <code>error_log</code>, <code>syslog</code>, <code>GameManagerLog</code>, and the <code>WinnerD</code> log.</p>

Description	Location
All aspects of player exclusion (exclusion, requests to lift exclusion, and actual lifting of exclusion).	<p>Player records are stored in the MySQL database and can be extracted either by ad-hoc SQL queries, or by using ACCPAC to generate summary accounting reports.</p> <p>Raw database transaction files are kept in <code>/array0/chroots/mysql/var/lib/mysql/binlog</code></p>
Records of any significant IGS events (such as game outcome or prize amounts) affected by external computer systems, datestamped and timestamped.	The system is fully self-contained, and as such, no external systems affect game outcome.
All significant events received from external computer systems that affect game outcome or win amounts.	The system is fully self-contained, and as such, no external systems affect game outcome.
All significant events, including the ability to search for particular event types.	System event logging is kept in <code>/var/log/messages</code> in a searchable ASCII file. Significant system events are also tracked using <i>mon</i> .
A way for the IGS to prioritise events and automatically act according to priority (for example, write to log, write to log and send alarm, or write to log and disable the IGS).	The logging mechanism is configured in a text file, <code>i/etc/syslog.conf</code> , which sets event logging locations and priorities.
PLAYER INFORMATION	
Player details (including verification method and results).	Player information is stored in the MySQL database in a series of linked tables. The two major tables involved are the <code>contact</code> table and the <code>subscription</code> table, which share the unique key <code>userid</code> .
Account details and balance.	<p>Account details relating to which games a player has subscribed to are in the <code>subscription</code> table held in MySQL.</p> <p>Players cannot accumulate debt because this is a subscription system. Wins are paid out directly without request from the player. Win information is kept in the <code>winner</code> and <code>wincredit</code> tables, which share the unique key <code>userid</code>.</p>
Maximum bet levels and exclusion status	Exclusion status is stored in the MySQL database in the <code>playerexclusion</code> table.

Description	Location
Previous accounts and reason for deactivation.	All players are assigned a single unique key and a unique account, which remain in the MySQL database and are not affected by account status. If an account is re-activated, it retains its original key. Reasons for deactivation is stored in the <code>playerexclusion</code> table in the MySQL database.
GAME SESSION INFORMATION	<i>Note:</i> This information is maintained on a per game basis with one file for each game session.
<ul style="list-style-type: none"> • Player ID • Session start and end times • Player device details 	<p>The information is contained in a binary file held in the directory <code>\$REVADATA/db/storables/\$USER/<prefix>-{session sess}-gametime_t</code></p> <ul style="list-style-type: none"> • <code>\$USER</code> is the system user, <code>gil</code> • <code><prefix></code> is <code>{Wingo;TopRoll;UK;Popster}</code> • <code><gametime_t></code> is the game time as Unix time (i.e. seconds from 1/1/1970) <p>To retrieve this information, enter either of the following at the command line prompt:</p> <ul style="list-style-type: none"> • reva PrintGameSession --Game <code><UKBingo;TopRoll;Popster;Wingo> \ -- File</code> <code><full file name></code> • reva PrintGameSession --Game <code><UKBingo;TopRoll;Popster;Wingo> \ .. GameTime</code> <code><unixtime> --Username <user></code>
Total monies won for session	Stored in the MySQL database; linked by the <code>slotid</code> number in the <code>gamesession</code> block to the <code>user_id</code> in the <code>winner</code> table.
Threshold for large win (which must be authorized by a Harrah's Operator instead of a Customer Care Representative)	Changing the <i>Large wins</i> threshold is a functional change to the game parameters; refer to Change Management Procedures for further information.
Player exclusion information (including excluded players, requests for exclusion, requests to lift exclusion, and actual lifting of exclusion).	All player exclusion data is held in the MySQL database in the <code>playerexclusion</code> table. This information can be displayed using the web-based Customer Care application.

Description	Location
Details of the player verification (if available online, it must be store in a secure manner); also, player verification status must be available to the on-line gaming application.	All sensitive data is encrypted and held in an inner layer of the IGS behind multiple firewalls. To date, we are not aware of anyone breaking OpenPGP. Player verification is accomplished by a third-party verification system, which returns a status of verified or not verified. Player verification status is stored in the MySQL database in the user_t table
A list of all registrations (current or otherwise) and accounts (active or otherwise)	A list of all accounts is kept in the MySQL database in the table user_t . Functionally duplicate information is held off-site in the ACCPAC system.
The ability to generate a report for each account, for a specified period of time that lists all deposit transactions (including the amounts) and all win transactions (including the amounts).	This information is held in the MySQL database, and is available as an ad-hoc query via the normal game system. <ul style="list-style-type: none"> • All deposit transactions are recorded in the paymentrequest table • The amount won is stored in the wincredit table.

5. Monitoring internal and external player support resources

All pages on the *LuckyMe* game site have links to player support resources. Internal resources include the Official Rules, FAQ, Terms of Use, Privacy, Security, Odds, company contact information, and Responsible Gaming. External resources include a link to *GamCare* (gamcare.co.uk), an organization that provides information, support and counselling for problem gamblers.

The player support resources monitored are:

- [popup/Help.php](#) - the game rules
- [popup/Responsible.php](#) - responsible gambling information
- www.gamcare.co.uk - information and support for problem gamblers

The publicly-accessible resources monitored are:

- The untrusted public end points of all the VPN tunnels
- The SMTP port of the `luckyme.co.uk` mail server

If any of these resources are not available, the the IGS sends an alert to the on-call engineer. To avoid interrupting game play for what may be a transient error, the IGS is designed to require human intervention to shut down.

In the event of a hard (i.e., not transient) failure, the on-call engineer will request the on-call manager to decide whether to bring down the IGS. Harrah's Interactive Ltd. controls (and monitors) Revahertz Inc.'s access to the IGS in real time, which includes the ability to shut down and re-start the IGS. The on-call engineering staff will consult with Harrah's Interactive Ltd. before performing a shut-down operation on the IGS.

In the event that it is not a transient failure, Revahertz Inc. Engineering Staff will notify the AGCC within 72 business hours of the failure, and will report the incident, its probably cause, and the follow-up response.

5.1 *LuckyMe* web site status

Along with our internal monitoring, the IGS is being externally monitored by KeyNote. Currently *KeyNote* is contracted to monitor

- `www.luckyme.co.uk`
- `ald-public-www-1.luckyme.co.uk`
- `lon-public-www-1.luckyme.co.uk`

KeyNote will notify Revahertz Inc. about any outages which are detected during their polling by email. *KeyNote* provides monthly performance reports to Revahertz Inc. which include statistics for the average response time for each system polled.

6. Example log summary

Each host system in the IGS generates a log file summary, which is stored in `/var/log` and sent to the Engineering staff.

A typical log summary looks like this:

Summary for `/var/local/alpha/export/logs//CRMUserD_errorlog`:

```
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 4
WARNING lib/AccountManager.cpp:1292 New user has duplicate email address: 1
WARNING lib/Payment.cpp:77 Tried to set a valid-from date in the future: 1
WARNING lib/Storeable.cpp:200 unpacked bad data, either network corruption
or somebody is spoofing us: 1
WARNING lib/CRManager.cpp:613 Received a manual override request for a user
has has passed their identity check: 1
WARNING lib/Payment.cpp:143 unpacked bad data, either network corruption or
somebody is spoofing the UserD: 1
```

Summary for `/var/local/alpha/export/logs//GamePiecePlayerD_errorlog`:

```
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 2
STATUS lib/WingoGameSession.cpp:264 we have a winner: 2
DEBUG lib/GameSessionMaker.cpp:217 fetching game pieces for game: 230
DEBUG lib/GameSessionMaker.cpp:59 generating game pieces: 230
DEBUG lib/Server.cpp:87 server initialized: 2
```

Summary for `/var/local/alpha/export/logs//GameSyncD_errorlog`:

```
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 139
DEBUG lib/Server.cpp:87 server initialized: 2
```

Summary for `/var/local/alpha/export/logs//PopsterManagerD_errorlog`:

```
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 211
WARNING lib/GameManager.cpp:311 Started up in the middle of a game skipping
to the next game: 1
WARNING lib/Server.cpp:170 mReceiveHandler took too long: 1
WARNING lib/GameManager.cpp:302 This game has already been played skipping
to the next game: 1
STATUS lib/Game.cpp:1176 Rolled Prize: 172
```

```
STATUS lib/Winner.cpp:560 New Winner: 22
STATUS lib/Winner.cpp:586 Divided Prize: 22
STATUS lib/GameManager.cpp:554 we have a winner: 22
STATUS lib/GameManager.cpp:890 Win claimed: 22
DEBUG lib/Server.cpp:87 server initialized: 2
```

Summary for /var/local/alpha/export/logs//ProcessOutgoingMail_errorlog:

```
WARNING lib/MySQLClient.cpp:121 SQL Query took too long!: 1
```

Summary for /var/local/alpha/export/logs//TopRollManagerD_errorlog:

```
FATAL lib/GameManager.cpp:170 Skipped turn: 1
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 52
WARNING lib/Server.cpp:170 mReceiveHandler took too long: 2
WARNING lib/MySQLClient.cpp:121 SQL Query took too long!: 1
WARNING lib/GameManager.cpp:311 Started up in the middle of a game skipping
to the next game: 1
WARNING lib/Game.cpp:755 Attempted to insert a duplicate key into hash
table. Does player have overlapping subscriptions?: 1
HOPE lib/TopRollGameManager.cpp:78 No high score found: 112
STATUS lib/Game.cpp:1176 Rolled Prize: 118
STATUS lib/Winner.cpp:560 New Winner: 51
STATUS lib/GameManager.cpp:554 we have a winner: 51
DEBUG lib/Server.cpp:87 server initialized: 2
```

Summary for /var/local/alpha/export/logs//UKBingoManagerD_errorlog:

```
FATAL lib/GameManager.cpp:170 Skipped turn: 1
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 85
WARNING lib/GameManager.cpp:311 Started up in the middle of a game skipping
to the next game: 1
STATUS lib/Game.cpp:1176 Rolled Prize: 467
STATUS lib/Winner.cpp:560 New Winner: 45
STATUS lib/Winner.cpp:586 Divided Prize: 45
STATUS lib/GameManager.cpp:554 we have a winner: 45
STATUS lib/GameManager.cpp:890 Win claimed: 39
DEBUG lib/Server.cpp:87 server initialized: 2
```

Summary for /var/local/alpha/export/logs//UserD_errorlog:

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```
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 108
WARNING lib/Login.cpp:227 invalid login attempt: 16
WARNING lib/AccountManager.cpp:1292 New user has duplicate email address: 1
```

Summary for /var/local/alpha/export/logs//WingoManagerD_errorlog:

```
FATAL lib/GameManager.cpp:170 Skipped turn: 1
WARNING lib/HeapTracker.cpp:168 Memory usage changed at build/
linux_none_dev/lib/Server.cpp:127: 220
WARNING lib/GameManager.cpp:311 Started up in the middle of a game skipping
to the next game: 2
WARNING lib/Game.cpp:755 Attempted to insert a duplicate key into hash
table. Does player have overlapping subscriptions?: 2
STATUS lib/Winner.cpp:560 New Winner: 2
STATUS lib/GameManager.cpp:554 we have a winner: 2
DEBUG lib/Server.cpp:87 server initialized: 2
```

Summary for /var/local/alpha/export/logs//apache/error.log:

```
FATAL lib/Middleware.cpp:627 Unhandled exception. Stack may be meaning-
less.: 4
FATAL lib/GameSession.cpp:217 unexpected player input type: 1
WARNING lib/BingoCard.cpp:261 dropping ball on square multiple times: 19
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined vari-
able: SwfServerURL: 18
WARNING lib/PopsterGameSession.cpp:493 client claimed false win: 17
WARNING lib/PopsterGameSession.cpp:298 Client connected early, possibly to
claim a win: 12
WARNING /homes/file4/bkane/product-creative-1-3/docroot/Web/includes/
ErrorMessages.php:23 Error(GenericGameError) ErrorMessage(Unable to con-
tact the game server, request(http://luckyme.revahertz.com:12121/f?ct=0)
user(BK202): 12
WARNING /var/local/alpha/export/php/User.php:782 invalid user/pass: 12
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined vari-
able: WinningsHistoryRows: 8
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined vari-
able: LastInitial: 7
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined vari-
able: FirstName: 7
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined
index: aol: 6
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined vari-
able: ReEnterPINError: 3
```

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```
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined variable: PIN: 3
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined variable: UseSSL: 3
WARNING /var/local/alpha/export/php/Debug.php:95 Fatal error caught:
parse error in <b>/homes/file4/bkane/product-creative-1-3/docroot/Web/LManyChannel.php</b> on line <b>68</b>: 3
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined variable: Testing: 3
WARNING lib/PopsterGameSession.cpp:205 Client missed turns: 2
WARNING /var/local/alpha/export/docroot/Web/includes/ErrorMessage.php:23
Error(GenericGameError) ErrorMessage(Unable to contact the game server,
request(http://luckyme.revahertz.com:12121/f?ct=0) user(BK202): 2
WARNING /var/local/alpha/export/php/Debug.php:95 Fatal error caught: PHP
experienced a fatal error: Bingo not defined in GameChannels, (is the config
file correct, or did you mean to use one of the dev channels?) in <b>/var/
local/alpha/export/php/RegistrationDefines.php</b> on line <b>1129</b>: 2
WARNING /var/local/alpha/export/php/Debug.php:37 [E_WARNING] Failed opening
'../includes/BodyPopup.php' for inclusion: 2
WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined variable: AgreeToTerms: 2
WARNING /var/local/alpha/export/php/Debug.php:95 Fatal error caught:
parse error in <b>/homes/file4/scohen/product-creative-1.3/docroot/Web/Verify.php</b> on line <b>1</b>: 1
WARNING /var/local/alpha/export/docroot/Web/includes/ErrorMessage.php:23
Error(GenericGameError) ErrorMessage(Server reported a system error)
user(CD224): 1
WARNING /var/local/alpha/export/docroot/Web/includes/ErrorMessage.php:23
Error(GenericGameError) ErrorMessage(Unable to contact the game server, )
user(BK202): 1
WARNING lib/WingoGameSession.cpp:185 No leader card in our BingoGame
object: 1
WARNING /var/local/alpha/export/php/Debug.php:95 Fatal error caught: Call
to undefined function: onepurplesolidtop() in <b>/var/local/alpha/export/
docroot/Web/Tour/popup/Email.php</b> on line <b>61</b>: 1
WARNING /var/local/alpha/export/docroot/Web/includes/ErrorMessage.php:23
Error(GenericGameError) ErrorMessage(unexpected RequestStatus(8))
user(SB223): 1
WARNING /homes/file4/bkane/product-creative-1-3/docroot/Web/includes/
ErrorMessage.php:23 Error(GenericGameError) ErrorMessage(Unable to con-
tact the game server, request(http://luckyme.revahertz.com:NaN/f?ct=0)
user(BK202): 1
WARNING /var/local/alpha/export/php/Debug.php:37 [E_WARNING] Failed opening
'../includes/FakePreProcessing.php' for inclusion: 1
```

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```
WARNING /var/local/alpha/export/php/Debug.php:95 Fatal error caught:  PHP
experienced a fatal error:  not defined in GameChannels, (is the config file
correct, or did you mean to use one of the dev channels?) in <b>/var/local/
alpha/export/php/RegistrationDefines.php</b> on line <b>1129</b>: 1

WARNING /var/local/alpha/export/docroot/Web/includes/ErrorMessage.php:23
Error(GenericGameError) ErrorMessage(unexpected RequestStatus(8))
user(BM221): 1

WARNING /var/local/alpha/export/php/Debug.php:46 [E_NOTICE] Undefined vari-
able:  GameChannel: 1

WARNING /var/local/alpha/export/php/Debug.php:95 Fatal error caught:  Call
to undefined function:  onepurplesolidtop() in <b>/var/local/alpha/export/
docroot/Web/Tour/popup/Call.php</b> on line <b>19</b>: 1

WARNING lib/PopsterGameSession.cpp:446 Client out of sync with server: 1
STATUS lib/PopsterGamePiece.cpp:357 Player won by having only the spinner
color left: 32

STATUS lib/GameSession.cpp:117 GameManager confirmed win: 6
STATUS lib/PopsterGamePiece.cpp:389 Winning game piece: 6
STATUS lib/GameSession.cpp:95 Player claimed a valid win: 6
STATUS lib/PopsterGamePiece.cpp:187 Player won by popping balls:
```