

## **S05 – SIMPLer Billing SAND - Subscriber Auto Notification and Disconnect User Guide**

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# 1 Subscriber Auto Notification and Disconnect (SAND)

## 1.1 Overview

The *Subscriber Auto Notification and Disconnect* feature (SAND) allows the operator to automatically notify customers by email when they come close to certain thresholds, and optionally to automatically disconnect/throttle them when they exceed thresholds.

The parameters, which may be monitored, are the “Invoice Payment Due” dates, the “Customer Traffic Limit” (CAP) and the “Lodgement Failure” dates. Each are explained in more detail in the following sections.

### 1.1.1 Invoice Payment Due based SAND

The Invoice Payment Due (IPD) based SAND will notify the customer when they have an outstanding invoice (i.e. unpaid) of greater than a certain age. Once notified, the customer will have the option to pay their remaining balance before they are either disconnected or their account is throttled. The operator will also have the option for SAND to automatically create a billing issue for any outstanding invoices and once the invoice has been finalised, the billing issue will be automatically closed. The system works based on the billing intervals of the customer, and by default (if boxes are checked to notify customers) can notify the customer if their previous invoice is still unpaid at 14 days (use “14 days” in box for 1<sup>st</sup> notification date) and 7 days prior to their next invoice being issued. (use “%FREQ% - 7 days”) in the 2<sup>nd</sup> email notification box. If so configured, the system can disconnect or throttle the customer at the next invoice date if the previous invoice is still unpaid.

For example, assume a customer is invoiced every 2 months, was last invoiced on 10/Jun and that invoice is still unpaid. The customer would be due to be invoiced again on 10/Aug (i.e. 10/Jun + 2 months). Using the default values mentioned above, the customer would receive a warning email if their invoice is still unpaid on 27/Jul (10/Aug – 14 days) and again on 3/Aug (10/Aug – 7 days). If their invoice is still unpaid on 10/Aug, the system will notify the customer and automatically disconnect or throttle them, if that portion of the feature is enabled.

The intervals at which the warning emails are sent (i.e. the 14 days and 7 days in the example above), the date on which they are disconnected/throttled and the text of the warning emails may be configured by the operator – see the section on configuring the feature (section 1.2).

### 1.1.2 Lodgement Failure SAND

**Note:** Invoice based SAND must be turned on for this feature to work. The notifications boxes at least must be checked for some use of this feature.

There are three notifications and one disconnection available:

- 1) 1st Lodgement Failure Email (lodgement\_failure\_email\_1 )
- 2) 2nd Lodgement Failure Email ( lodgement\_failure\_email\_2 )
- 3) 3rd Lodgement Failure Email ( lodgement\_failure\_email\_3 )
- 4) Lodgement Failure Disconnection ( lodgement\_failure\_disconnection )

The feature is enabled when lodgement failure occurs and "SAND Notification Date" is specified under "Lodgement Details" page (Fig. 1) Date that is specified there determines 1st Lodgement Failure email to be sent, ie. it is sent next SAND run after the date specified. The SAND run is specified under the SAND settings in modify WISP. It can run once a day at a specific time, or at variables in minutes up to 60. The recommended setting is once a day at a specific time.

Dashboard
Map
Customers
**Invoices**
Products
Network
Hotspots
Radius
Tools
Settings
Logout
QuickSearch ...

**General:**
Change Details
History
Lodgements
Search Invoices

**Lodgement A195 [686] details**
Date: 13 Mar 2013  
Type: direct debit  
Amount: 96.80  
Amount Failed: 0.00  
Narrative:  
Winbits (EFT/AMT) File: A195\_winbits\_test\_9680.txt

**Payment positions**

Results 1 - 2 of 2

Number of results to display per page: 100

Invoicing ID	Bank Ref	Lodgement	Inv. No.	Prepayment Used	Invoice Date	Posted Date	Total Amount	Discount Allowed	Narrative	Status	Failure Date	SAND Notification Date
<input type="checkbox"/> HenryWarrington	Bank Of the World	A195 [686]	14500	-	28 Dec 2011	27 Jan 2012	48.40	0.00		failed	24/06/2013	24/06/2013
<input type="checkbox"/> HerbertPerry	Bank Of the World	A195 [686]	14376	-	08 Dec 2011	14 Dec 2011	48.40	0.00		paid		
Total:							96.80	0.00	Note: Total amount is full amount of lodgement (incl. failed payments)			

Fig. 1.1.2-1 SAND Notification Date

2nd Lodgement Failure Email, 3rd Lodgement Failure Email and Lodgement Failure Disconnection can also be set up.

Under global WISP settings, ie "Settings" -> "Modify WISP", section "Subscriber Auto Notify/Disconnect", subsection "Lodgement Failure SAND" there are fields that can be populated (Fig. 2).

**Lodgement Failure SAND**

(Note: 1st Notification Email is sent right after lodgement failure was reported.)

2nd Lodgement Failure Email
3 days
?

3rd Lodgement Failure Email
6 days
?

Lodgement Failure Disconnection
7 days
?

**Invoice SAND Processing Mode**

☒ Once a Day at a Specified Time
☐ Periodically

Disconnection Time  
(Server Local Time: 2013-06-24 08:46:04)

Execute SAND each 60 minutes

Fig. 1.1.2-2 Lodgement Failure SAND

Using the settings seen in Fig. 1.1.2-1 and fig. 1.1.2-2, the first notification will be sent at the next SAND run after June 24<sup>th</sup>. The second notification will go three days after this. The third notification goes 6 days after the first notification and the disconnection will happen 7 days after the first SAND notification.

Lodgement Failure SAND variables can be overwritten on a per customer basis. Under "Modify Customer" page, "Banking Details" section, "Billing Subscriber Auto Notification/Disconnection" subsection select "Overwrite Defaults" from "Status" dropdown (Fig. 3).

**Billing Subscriber Auto Notification/Disconnection**

Status: Override Defaults ?

**Override Parameters**

Email From:  ?

Email To:  ?

Email Bcc:  ?

Create Billing Issue Date:  ?

1st notification email date:  ?

2nd notification email date:  ?

Disconnection date:  ?

Throttling date:  ?

**Lodgement Failures**  
(Note: 1st Notification Email is sent right after lodgement failure was reported.)

2nd Lodgement Failure Email:  ?

Lodgement Failure Disconnection:  ?

3rd Lodgement Failure Email:  ?

**Fig. 3. Lodgement Failure SAND on per customer basis.**

### 1.1.3 Customer Traffic Limit SAND

The Customer Traffic Limit (CTL) based SAND will notify the customer when their monthly data usage exceeds certain percentages of a limit (CAP) set by the operator. The customer will receive a warning email when they have exceeded the threshold, allowing them to limit their Internet usage for the remainder of the measurement period. The system may also be configured to automatically disconnect a customer if they exceed a given limit, alternatively, if it is preferred not to disconnect a customer, it is possible to throttle a customer's connection, resulting in a lower available bandwidth and as a result an overall slower connection or else it is possible to bill a customer for any overage that has occurred. This is aimed to prompt customers to pay existing invoices without disconnecting them completely. The CAP imposed by the operator is a combined upload and download CAP (i.e. the upload and download data are summed and compared to the imposed CAP), and applies per-month. The start date of each monthly period starts on the first day of the month and ends on the last day of the month, if a customer has a "Start Date" different than that of the 1<sup>st</sup> of the month, the customer's bandwidth is appropriately prorated. The default thresholds at which warning emails are sent (if box is checked to receive such notifications) are 80% and 95% of the defined CAP, and the level at which the customer will automatically be disconnected/throttled or overage billed is set at 105% - the customer will also receive a notification email when they reach this "level", even if the system is not configured to automatically disconnect them.

For example, suppose a customer was last invoiced on 10/Jul and has a monthly CAP of 10Gb. Using the default thresholds of 80% and 95%, the customer would get a first warning email if they have transferred in excess of 8Gb (80%) before 10/Aug, and would get a second warning email if they have transferred in excess of 9.5Gb. If auto disconnect is enabled, the customer would receive a notification email and be disconnected if they have transferred in excess of 10.5Gb of data. On the 10/Aug their usage would again be re-set to 0, and they could again transfer up to 8Gb before 10/Sep before they would get another warning email.

The thresholds at which warning emails are sent (i.e. 80% and 95% by default), the level at which they are disconnected/throttled or overage billed and the text of the warning emails may be configured by the operator – see the section on configuring the feature below.

## 1.2 Configuration

### 1.2.1 System Wide Configuration

System wide default configuration is carried out by setting values in the "Subscriber Auto Disconnect" section of the WISP details page, which may be accessed from users → Modify WISP details. The values set here act as defaults, and will be used for all customers unless over-ridden by per-customer settings (see section 1.2.3). Figure 1.2.1-1 below shows the default appearance of the "Subscriber Auto Disconnect" section. The table following gives details of each of the fields.

**Alert Thresholds for WIB** (if threshold=0 then alert disabled)**Subscriber Auto Notify / Disconnect ?**

<b>Invoice Payment Due based SAND</b>	<input type="checkbox"/> Create / Close Billing Issues <input type="checkbox"/> Notification Emails <input type="checkbox"/> Throttling / Auto Disconnection
Email From:	<input type="text"/> ?
Email To:	<input type="text"/> ?
Email Bcc:	<input type="text"/> ?
Create Billing Issue Date	<input type="text"/> ?
1st notification email date	<input type="text"/> ?
2nd notification email date	<input type="text"/> ?
Disconnection date	<input type="text"/> ?
Throttling date	<input type="text"/> ?
Minimum Amount Owed	<input type="text" value="0.00"/> ?
<b>Lodgement Failure SAND</b>	
(Note: 1st Notification Email is sent right after lodgement failure was reported.)	
2nd Lodgement Failure Email	<input type="text"/> ?
3rd Lodgement Failure Email	<input type="text"/> ?
Lodgement Failure Disconnection	<input type="text"/> ?
<b>Invoice SAND Processing Mode</b>	
<input checked="" type="radio"/> Once a Day at a Specified Time Disconnection Time (Server Local Time: 2013-06-21 09:28:44) <input type="text" value="00"/> : <input type="text" value="30"/>	<input type="radio"/> Periodically Execute SAND each <input type="text" value="60"/> minutes
<b>Customer Traffic Limit based SAND</b>	
<input checked="" type="checkbox"/> Notify Customer <input checked="" type="checkbox"/> Overage Billing / Throttling / Auto Disconnection <input type="checkbox"/> Do not carry over overage top-ups to the next period <input type="checkbox"/> Do not prorate the CAP in the first month <input type="checkbox"/> Do not set 'valid from' date on overage top-up subscription	
Email From:	<input type="text"/> ?
Email To:	<input type="text"/> ?
Email Bcc:	<input type="text"/> ?
1st notification email threshold [%]	<input type="text"/> ? Email Limit (monthly) <input type="text"/> ?
2nd notification email threshold [%]	<input type="text"/> ? Email Limit (monthly) <input type="text"/> ?
Disconnection threshold [%]	<input type="text"/> ? Email Limit (monthly) <input type="text"/> ?
Overage/Throttling threshold [%]	<input type="text"/> ? Email Limit (monthly) <input type="text"/> ?
Calculation Period	Based on the last day of the month ?
<b>Traffic Limit SAND Processing Mode</b>	
<input checked="" type="radio"/> Once a Day at a Specified Time Disconnection Time (Server Local Time: 2013-06-21 09:28:44) <input type="text" value="23"/> : <input type="text" value="50"/>	<input type="radio"/> Periodically Execute SAND each <input type="text" value="60"/> minutes
<b>SAND run - exclude days of disconnection</b>	
Exclude days of week	<input type="checkbox"/> Sunday <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday <input type="checkbox"/> Thursday <input type="checkbox"/> Friday <input type="checkbox"/> Saturday
Select days to be excluded	<input type="text" value="Jun"/> <input type="text" value="21"/> 2013 <input type="button" value="Add Day"/> ?
Excluded days	<input type="text" value="14/02/2012"/> <input type="button" value="Delete"/>
<b>Time of Day Data Usage Exemption</b>	
Specify time to be excluded from usage	From: <input type="text" value="Sunday"/> <input type="text" value="00"/> : <input type="text" value="00"/> To: <input type="text" value="Sunday"/> <input type="text" value="00"/> : <input type="text" value="00"/> <input type="button" value="Add Period"/>
Excluded Periods	<input type="text"/> <input type="button" value="Delete"/>

**Figure 1.2.1-1 SAND system wide configuration options**

## 1.2.1.1 Invoice Payment Due based SAND

Field	Description	Mandatory	Format
<b>Invoice Payment Due based SAND</b>	<p>Controls the operation of the IPD portion of the SAND feature. Options are:</p> <p><b>All Boxes Unchecked:</b> IPD portion is disabled.</p> <p><b>Create / Close Billing Issues checked:</b> SIMPLer will automatically create a billing issue, once an invoice is outstanding and will automatically close this issue again once the Invoice has been paid.</p> <p><b>Notification Emails checked:</b> Customers will receive warning emails, when invoices become outstanding to prompt them to pay remaining balances.</p> <p><b>Throttling / Auto Disconnection checked:</b> Customer will either have their accounts throttled or disconnected if the remaining balances have not been cleared.</p>	Yes	Checkboxes
<b>Email From</b>	Specify the From: address of any warning emails sent by the IPD SAND feature. If this is not specified the operators accounts email address (or the operators default email address if the accounts email address is not set) will be used. See “contact details” under Modify WISP to modify these addresses.	No	Email Address
<b>Email To</b>	Specifies the To: address of any warning emails sent by the IPD SAND feature. By default the customers email address will be used, causing the warning emails to be sent directly to them. However the operator may specify an email address here instead. In this case all of the warning emails will be sent to this email address rather than directly to the customer. An example of the use of this might be for testing purposes or to send all of the emails to a customer service department, who may contact the customers in turn.	No	Email Address
<b>Email Bcc</b>	Specifies the Bcc: address of any warning emails. If this is not specified the operators accounts email address (of the operators default email address if the accounts email address is not set) will be used.	No	Email Address
<b>Create Billing Issue Date</b>	Specifies the date on which billing issues are created on the customer’s account. The default value is “%FREQ% - 14 days”, which can cause the billing issue to be created 14 days before the next invoice is due. You can also use another format to create billing issues a certain number of days after the invoice date. (i.e invoice generated on June 5 <sup>th</sup> , also due June 5 <sup>th</sup> , operator wishes for a billing issue to be created on June 10 <sup>th</sup> if the invoice is unpaid. Enter “5 days” to this field.	No	Text
<b>1<sup>st</sup> notification email date</b>	<p>Specifies the date on which the first warning email will be sent. The default value is “%FREQ% - 14 days”, which will cause the warning email to be sent 14 days before the next invoice is due.</p> <p>If this field is blank the corresponding warning email will not be sent. An “x days” format can also be used. If “10 days” set this will mean that a notification will be sent out</p>	No	Text

Field	Description	Mandatory	Format
	<p>10 days after the invoice date.</p> <p>See below (1.2.1.6) for a further description of the format of this field.</p>		
<b>2<sup>nd</sup> notification email date</b>	<p>Specifies the date on which the second warning email will be sent. The default value is “%FREQ% - 7 days”, which will cause the warning email to be sent 7 days before the next invoice is due.</p> <p>If this field is blank the corresponding warning email will not be sent.</p> <p>If this field is blank the corresponding warning email will not be sent. An “x days” format can also be used. If “20 days” set this will mean that a notification will be sent out 20 days after the invoice date.</p> <p>See below (1.2.1.6) for a further description of the format of this field</p>	No	Text
<b>Disconnection Date</b>	<p>Specifies the date on which the customer will automatically be disconnected, if auto disconnect is enabled. The default value is “%FREQ%” which will cause the customer to be disconnected on the date the next invoice is due to be issued.</p> <p>If this field is blank a notification email will not be sent and the customer will not be disconnected.</p> <p>An “x days” format can also be used. If “30 days” set this will mean that the customer will be auto disconnected 30 days after the invoice date.</p> <p>See below (1.2.1.6) for a further description of the format of this field</p>	No	Text
<b>Throttling Date</b>	<p>Specifies the date on which the customer will automatically be throttled, if throttled in enabled. The default value is “%FREQ%” which will cause the customer to be disconnected on the date the next invoice is due to be issued.</p> <p>If this field is blank a notification email will not be sent and the customer will not be disconnected.</p> <p>An “x days” format can also be used. If “25 days” set this will mean that the customer will be throttled 25 days after the invoice date.</p> <p>See below (1.2.1.6) for a description of the format of this field</p>		
<b>Minimum Amount Owed</b>	<p>Some operators do not like to include their customers in the SAND process if there is a small sum of money outstanding on their account. In this section you can set the limit. If you prefer not to disconnect customers who owe 5.00 or less, set 5.00 in this field.</p>	No	Text. (Number format, i.e 5.00)
<b>Invoice SAND Processing Mode</b>	<p>Can occur either once a day at the time you specify OR at intervals of 10,15, 20, 30 or 60 minutes.</p>	Yes	Check bubble and dropdown menu for



Field	Description	Mandatory	Format
			time/frequency

### 1.2.1.2 Lodgement Failure SAND

Field	Description	Mandatory	Format
<b>Lodgement Failure SAND</b>	Heading only  Note: First notification email will go out at the next SAND processing date/time once a lodgement failure has been reported in SIMPLer and a SNAD notification date specified.  <b>Note:</b> Invoice based SAND must be turned on for this feature to work.	No entry required	No entry required
<b>2<sup>nd</sup> Lodgement Failure Email</b>	Set this field to the amount of days after the lodgement failure that you wish for customers to receive their 2 <sup>nd</sup> failure notifications. i.e “5 days”	No	Text
<b>3<sup>rd</sup> Lodgement Failure Email</b>	Set this field to the amount of days after the lodgement failure that you wish for customers to receive their 3 <sup>rd</sup> failure notifications. i.e “7 days”	No	Text
<b>Lodgement Failure Disconnection</b>	Set this field to the amount of days after the lodgement failure that you wish for customers to be disconnected. i.e “8 days”	No	Text
<b>Invoice SAND Processing Mode</b>	Can occur either once a day at the time you specify OR at intervals of 10,15, 20, 30 or 60 minutes.	Yes	Check bubble and dropdown menu for time/frequency

### 1.2.1.3 Customer Traffic Limit based SAND

Field	Description	Mandatory	Format
<b>Customer Traffic Limit based SAND</b>	Controls the operation of the CTL portion of the SAND feature. Options are:  <b>Unchecked:</b> CTL portion is disabled  <b>Notify Customer checked:</b> Customers will receive warning emails, but will not be automatically disconnected  <b>Overage Billing/ Throttling/ Auto Disconnection checked:</b> Customers will receive warning emails and will be either disconnected, throttled or billed for their over usage.	Yes	Checkbox
<b>Email From</b>	Specify the From: address of any warning emails sent by the CTL SAND feature. If this is not specified the operators accounts email address (of the operators default email address if the accounts email address is not set) will be used	No	Email Address

Field	Description	Mandatory	Format
<b>Email To</b>	Specifies the To: address of any warning emails sent by the CTL SAND feature. By default the customers email address will be used, causing the warning emails to be sent directly to them. However the operator may specify an email address here instead. In this case all of the warning emails will be sent to this email address rather than directly to the customer. An example of the use of this might be for testing purposes or to send all of the emails to a customer service department, who may contact the customers	No	Email Address
<b>Email Bcc</b>	Specifies the Bcc: address of any warning emails. If this is not specified the operators accounts email address (of the operators default email address if the accounts email address is not set) will be used	No	Email Address
<b>1<sup>st</sup> notification email threshold [%]</b>	Specifies the percentage of allowed CAP at which the first warning email will be sent. The default value is 80%.  If this field is blank the corresponding warning email will not be sent.  On the same line you can also set a limit to the number of emails that can be sent out per month.	No	Numeric
<b>2<sup>nd</sup> notification email threshold [%]</b>	Specifies the percentage of allowed CAP at which the second warning email will be sent. The default value is “95%”.  If this field is blank the corresponding warning email will not be sent.  On the same line you can also set a limit to the number of emails that can be sent out per month.	No	Numeric
<b>Disconnection threshold [%]</b>	Specifies the percentage of allowed CAP at which the customer will automatically be disconnected, if auto disconnect is enabled. The default value is “105%”.  If this field is blank a notification email will not be sent and the customer will not be disconnected.  On the same line you can also set a limit to the number of emails that can be sent out per month.	No	Numeric
<b>Overage/ Throttling threshold [%]</b>	Specifies the percentage of allowed CAP at which the customer will automatically be billed for overage or throttled, if Overage Billing/ Throttling has been enabled.  If this field is blank a notification email will not be sent and the customer will not be disconnected.  On the same line you can also set a limit to the number of emails that can be sent out per month.	No	Numeric
<b>Calculation Period</b>	This is the period that the SAND calculations are based on.  The default setting for this period is based on the last day of the month.  On the same line you can also set a limit to the number of emails that can be sent out per month.	Yes	Dropdown menu

Field	Description	Mandatory	Format
<b>Traffic Limit SAND Processing Mode</b>	<p>The time of the day at which SAND will run.</p> <p>Note that time relates to the local time on the SIMPLer server (which may be in a different time zone to the operator). The local time on the server is displayed on the configuration page.</p> <p>Can be set to run once a day at a specific time, or every 10, 15, 20, 30 or 60 minutes.</p>	Yes	Check bubble and drop down list

#### 1.2.1.4 SAND run – exclude days of disconnection

Field	Description	Mandatory	Format
<b>Exclude days of week</b>	Specifies whether days of the week are to be exclude from the days of disconnection. This is particularly useful, if the operator would prefer not to disconnect people on a Sunday, if they do not have any call staff working to take calls regarding disconnections.	No	Checkboxes
<b>Select days to be excluded</b>	Specific calander days can be specified to be excluded from the days fo disconnection. This can be used to specify national holidays for example.	No	Dropdown menu and numeric
<b>Excluded days</b>	Specifies a list of all days that are excluded from day of disconnection	NO	Dropdown list

#### 1.2.1.5 Time of Day Usage Exemption

Field	Description	Mandatory	Format
<b>Specify Time to be excluded from Usage</b>	Specifies periods for usage to be exluded. i.e evenings.	No	Dropdown menu and numeric
<b>Excluded Periods</b>	Periods excluded above will be displayed in this dropdown menu.	No	Dropdown

Note: There is a setting under “modify WISP” called “New Customer Exempted Period Allowed” where operators can set all new customers to avail of this feature by default. If it needs to be set on a per customer basis the setting is under the cutomer’s “network settings”.

#### 1.2.1.6 Format of Date fields

The “date” fields for the IPD SAND portion of the feature (1<sup>st</sup> / 2<sup>nd</sup> notification email date, disconnect date) are based on the last invoice issued date and can take inputs such as month, months, year, years, day, days, week, weeks with +/- operators. The special token %FREQ% is the billing frequency for the customer. Examples of valid inputs would be:

“1 week” – one week after the invoice was issued. (based on invoice date – not date of mailing)

“3 days” – 3 days after the invoice was issued. (based on invoice date – not date of mailing)

“%FREQ%” – one billing interval after the invoice was issued. For example, if the customer is billed every two months, this would be two months after the customer was last billed. (based on invoice date – not date of mailing)

“%FREQ% - 10 days” – one billing interval less 10 days after the customer was last billed. (based on invoice date – not date of mailing)

“%FREQ% - 1 week – 1 day” – one billing interval less 8 days after the customer was last billed. (based on invoice date – not date of mailing)

## 1.2.2 Product based Traffic Limit Configuration

The traffic limit imposed on a customer may be set, based on the products the customer is subscribed to, or may be set on a per-customer basis (see section 1.2.3). Where a value is set in a customer’s settings it will over-ride product based limits.

Each product that is defined in the system, may have a traffic limit associated with it – see Figures 1.2.2-1 and 1.2.2-2 below:

**Products** Campaigns Packages Revenue / customer

**Modify a product**

**General Product Details**

Product Code: 1-Spider Web

Product Description: Spider Web High Speed Internet Package

Product Type: Standard ?

Import/Dynamic Formula: %%IMPORTVALUE%% ?

**Financial Details**

Price (ex. VAT/TAX): 50.00

TAX Mode: Flexible System

TAX Zone: State X Tax Zone

Summary TAX Rate [%]: 8.25

Nett Amount Rounding Method: arithmetic

Projected Total Price (inc. TAX): 54.12

**Product Nominal Details**

Product Nominal Account: ?

Nominal: ?

Description: ?

**Subscription Default Details**

Subscription Default Type: Recurring

Subscription Default Cycles: ?

Subscription Default Valid From: ?

Subscription Default Valid To: ?

Subscription Default 'Use Free Service Bonus': Yes

**EUP Product Details**

EUP available: No

EUP Product Description: ?

EUP Tied to Product: 1-Spider Web - Spider Web High Speed 1GB CAP - 25CAP - Broadband Internet 25 GB Domain - Site Hosting

**Other Details**

Traffic Allowance [GB]: 25

Turn Off Prorating: No

Deferred: Yes

Back Update

Note: Product cannot be deleted as it is assigned to 3 customer(s)

Figure 1.2.2-1 Add/Modify product

Dashboard

Map

Customers

Invoices

Products

Network

Hotspots

Radius

Tools

Settings

Logout

QuickSearch ...

Products

Campaigns

Packages

Revenue / customer

Results 1 - 18 of 18

Number of results to display per page : 

All

ID	Product Code	Product Type	Product Description	Nominal	Price	Summary TAX Rate [%]	Rounding Algorithm	Traffic Allowance	Subscription Default Type	Subscription Default Validity Settings	Active Customers (All customers)	Average amount per month	
11	1GB CAP	-		-	264.00	14.00 %?	arithmetic	1 GB	Reconnection	Cycles: 30 Free Service: Yes	0 (2)	0.00	<div>E</div> <div>H</div>
19	1-Spider Web	-	Spider Web High Speed Internet Package	-	50.00	8.25 %?	arithmetic	25 GB		Free Service: Yes	2 (3)	100.00	<div>E</div> <div>H</div>
12	25CAP	-	Broadband Internet 25 GB	-	369.00	14.00 %?	arithmetic	25 GB		Free Service: Yes	0 (1)	0.00	<div>E</div> <div>H</div>
10	Domain	-	Site Hosting	10003	2.00	21.00 %?	arithmetic	-		Free Service: Yes	27 (29)	54.00	<div>E</div> <div>H</div>
2	Hiper	-	Power Broadband 20Mb	10001	40.00	21.00 %?	arithmetic	-		Free Service: Yes	362 (495)	14480.00	<div>E</div> <div>H</div>
9	Mail	-	Mail Hosting	10003	2.00	21.00 %?	arithmetic	-		Free Service: Yes	227 (228)	441.17	<div>E</div> <div>H</div>
17	Monthly non-taxable	-	Non-taxable portion of Monthly Service - first \$25 tax free	-	25.00	0.00 %?	arithmetic	-		Free Service: Yes	1 (1)	25.00	<div>E</div> <div>H</div>

Figure 1.2.2-2 Product summary showing traffic allowance

If Customer Traffic Limit based SAND is enabled for a customer, the customers traffic limit is determined by summing the traffic allowance associated with each of the products that the customer is subscribed to. This allows customers to purchase additional bandwidth by subscribing to extra products. For example, using the sample in Figure 1.2.2-3, a customer subscribing to “Broadband Starter (1 month in advance)” will have an allowance of 5Gb at a cost of 12.99. Should that customer require additional bandwidth, they could also subscribe to the “5Gb traffic allowance” product to get an additional 5Gb per month at an extra cost of 10.00, giving a total of 22.99 for 10Gb, or they could subscribe to “Additional 10Gb traffic allowance” at an extra cost of 15.00 to get a total of 15Gb per month.

Multiple products may be added to a customer’s subscriptions. In that case the traffic allowance associated with each product is multiplied by the quantity. For example, in the subscription below the customer has subscribed to 1 x Starter 1M (5Gb), 2 x 10Gb and 1 x 5Gb, giving a total allowance of 5 + 20 + 5 = 30Gb.

Subscription Details <a href="#">(modify)</a> <a href="#">(history)</a>												
Current Recurring Products												
Code	Description	Qty	Price	Import	Disc.	Premium	TAX / VAT Rate	Total	Valid Dates	Cycles Left	Traffic Allowance	Use Free Service Bonus
10 Gb	Additional 10Gb traffic allowance	1	10.00	Y	0.00 %	0.00 %	10.0000 % ?	11.00			10 GB	Yes
OV1	Overage 1Gb	1	10.00	N	0.00 %	0.00 %	10.0000 % ?	11.00			1 GB	Yes
10 Gb	Additional 10Gb traffic allowance	1	10.00	Y	0.00 %	0.00 %	10.0000 % ?	11.00			10 GB	Yes
Total Amount (USD)								33.00				
to be paid each frequency period (including TAX / VAT)												

Figure 1.2.2-3 Subscription Details

If the traffic allowance associated with a set of products is zero, or blank, a traffic limit will not apply.

As noted above, and product based traffic allowance may be over-ridden by setting a traffic allowance in the customers settings (see section 1.2.3).

### 1.2.3 Per-Customer Configuration

The system wide configuration of the feature may be modified on a per customer basis if required. The per-customer IPD and lodgement failure SAND settings are on the “Banking details” page, and the per-customer CTL settings are on the “Network details” page of the customer settings. In both cases the “Status” flag indicates how the corresponding portion of the feature should be treated. The allowed values are as follows:

1. “Default”: The system wide settings are used for the customer.
2. “Off”: The feature is disabled for the customer - i.e. the customer will not be notified or automatically disconnected.
3. “Override Defaults”: The values specified in the customer details override the corresponding system wide values.
4. “Deferred”: Allows an operator to defer SAND running for individual customers until a specified date.

5. Note: If status is not set to “default”, the status will be visible from the “customer details” page under the billing section

In addition, for the CTL based SAND, a “Monthly Traffic Limit” in Gb may be set for the customer. If this field is set to a non-zero value, this CAP will apply rather than the CAP calculated based on the customers subscriptions.

## 2 Features

### 2.1 Invoice Due based SAND (Throttling Configuration & Properties)

Operators may also setup a throttling limit in order to cut off some part of a customer Internet speed if they fail to pay their invoice.

In order to take advantage of the throttling system Invoice Payment Due based SAND (Fig. 2.1-1) must be set to “**Notification Emails + Throttling / Auto Disconnection**”.

**Subscriber Auto Notify / Disconnect ?**

**Invoice Payment Due based SAND**

☐ Create / Close Billing Issues

☒ Notification Emails

☒ Throttling / Auto Disconnection

Email From:  ?

Email To:  ?

Email Bcc:  ?

Create Billing Issue Date  ?

1st notification email date  ?

2nd notification email date  ?

Disconnection date  ?

Throttling date  ?

Minimum Amount Owed  ?

**Invoice SAND Processing Mode**

☒ Once a Day at a Specified Time ☐ Periodically

Disconnection Time (Server Local Time: 2011-11-11 15:09:56) Execute SAND each  minutes

**Figure 2.1-1: Customer Invoice Payment Due based SAND**

Three options are available:

**Off** – Customer Invoice SAND is off. None of the boxes are checked.

**Notification Emails** – Customer will only receive notification emails about their invoice date, but no further action will occur.

**Notification Emails + Throttling/Auto Disconnection** – Customer will receive notification emails and appropriate action will take place if the Customer did not pay for an invoice.

In order for action to take place the field must not be left blank.

**Note:** The fields can be overridden on a per customer basis under “Network details” tab (Fig. 2.1-2)

**Figure 2.1-2: SAND under Customer “Banking details”**

When the “Notification Emails + Throttling/Auto Disconnection” option is selected the following actions take place:

Disconnection Date	Throttling Date	Default Action*
Blank	Blank	No action is taken
Set	Blank	Customer disconnected if invoice still unpaid by set threshold
Blank	Set	See Section 2.1.1 below
Set	Set	See Section 2.1.2 below

### 2.1.1 Throttling Priorities

1. Customer is assigned to a bucket with a throttling threshold set

The customer will be automatically moved to the “throttle” bucket that is associated with their regular bucket.

2. Customer is not assigned to a bucket with a throttling threshold set

No action will be taken.

### 2.1.2 Disconnect / Throttling Priorities

1. Customer is assigned to a bucket with a throttling threshold set

Throttling action occurs. See 2.1.1 (1.)

2. Customer is not assigned to a bucket with a throttling threshold set

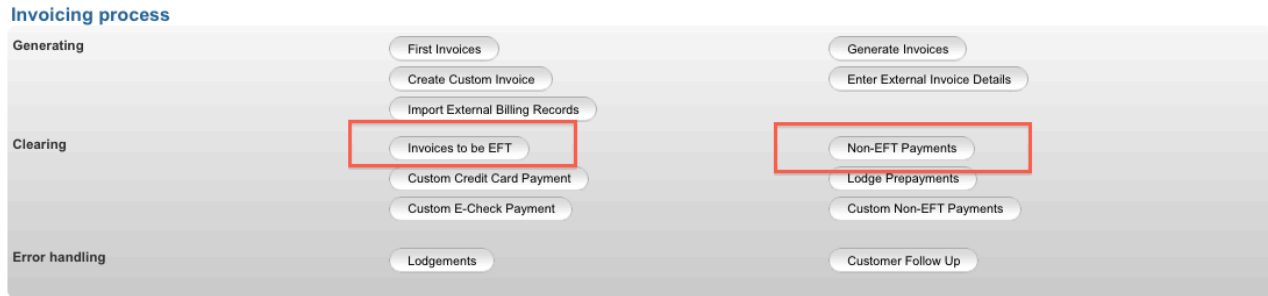
The customer will be disconnected if they did not pay off their invoice after the period that is specified under “Disconnection date” field.

### 3. Customer is not assigned to a bucket with a throttling threshold set & Customer did not reach disconnection threshold

No action is taken.

## 2.2 Invoice based SAND Auto-Reconnect

The invoice based SAND (Subscriber Auto Notification/Disconnection) system has been enhanced to automatically reconnect customers whose overdue invoices have been paid by EFT or Non-EFT methods.



**Figure 2.2-1: Invoice Processing**

Customers who have previously been disconnected by the invoice based SAND system will be automatically reconnected when the Operator lodges payments against all their outstanding invoices for which the “**Invoice Date**” is older than the period specified in the “**SAND Invoice Disconnection Date**”:

**Subscriber Auto Notify / Disconnect ?**

**Invoice Payment Due based SAND**

☐ Create / Close Billing Issues

☒ Notification Emails

☒ Throttling / Auto Disconnection

Email From:  ?

Email To:  ?

Email Bcc:  ?

Create Billing Issue Date  ?

1st notification email date  ?

2nd notification email date  ?

**Disconnection date**  ?

Throttling date  ?

Minimum Amount Owed  ?

**Invoice SAND Processing Mode**

☒ Once a Day at a Specified Time ☐ Periodically

Disconnection Time (Server Local Time: 2011-11-11 15:09:56) Execute SAND each  minutes

**Figure 2.2-2: Invoice Based SAND Settings**



If any outstanding invoices remain for which the “**Invoice Date**” is older than the period specified in the “**SAND Invoice Disconnection Date**”, then the customer will not be automatically reconnected. After the lodgment process is completed a summary page will be displayed showing a list of customer who were reconnect by the SAND system.

>>

The database was updated successfully for the customers listed below.

Lodgement Details:  
Reference: **A1**  
Narrative:  
Date: **29 Mar 2010**  
Type: **cash**

Invoicing ID	Invoice No	Invoice Amount	Payment Amount	Discount Allowed	Narrative	Actual Payment
10	12	40.16	40.16	0.00		40.16
10	14	0.00	0.00	0.00		0.00
10	13	0.00	0.00	0.00		0.00
1000717	6	5000.00	5000.00	0.00		5000.00
1000717	7	10000.00	10000.00	0.00		10000.00
adamus	18	80.32	80.32	0.00		80.32
adamus	17	40.16	40.16	0.00		40.16
adamus	19	80.32	80.32	0.00		80.32
adamus	10	40.16	40.16	0.00		40.16
adamus	15	40.16	40.16	0.00		40.16
adamus	16	40.16	40.16	0.00		40.16
adamus	20	200.80	200.80	0.00		200.80
popo	21	80.32	80.32	0.00		80.32
popo	11	40.16	40.16	0.00		40.16
popo	27	40.16	40.16	0.00		40.16
popo	22	40.16	40.16	0.00		40.16
popo	23	80.32	80.32	0.00		80.32
SiPatSmissonarysocietymonastery	26	40.16	40.16	0.00		40.16
tl77	9	9000.00	9000.00	0.00		9000.00
tl77	8	5000.00	5000.00	0.00		5000.00
tet	24	40.16	40.16	0.00		40.16
tet	25	40.16	40.16	0.00		40.16
		<b>Total Amount:</b>		29963.84		

Customers reconnected by SAND:

163. adam  
178. tl7  
179. adamus  
184. 10  
190. popo

Fig 2.2-3: Reconnected Customers

## 2.3 SAND Overage Billing

The SAND Overage Billing feature is in addition to the existing SAND checks. It implements the billing for overage bandwidth usage where applicable. The checks are performed on a daily basis along with other SAND checks. It is good to note that operators can specify the exact time these scripts are executed from the ‘*modify WISP*’ page. The overage billing calculates the customer traffic allowance from all their current subscriptions and checks if the current customer usage is over a predefined threshold. If it is, then the system lists the customer ‘Overage’ subscriptions and for each one of them adds a ‘once-off’ recurring position that will be picked up on the next invoice. Additional traffic allowance will also be added at this stage (based on the traffic allowance of the products used for ‘Overage’ subscriptions).

Note: Additional traffic allowance is not only valid within one billing cycle, it is valid until it is completely used up and this will be automatically split over several months

### 2.3.1 Enable SAND Overage Billing

The SAND Overage Billing feature is enabled from the ‘modify WISP’ page. The Operator needs to ensure that:

1. **Customer Traffic Limit based SAND** is set to **Notification Emails + Overage / Auto Disconnection**
  2. **Overage Threshold** has to be set to a **numeric** value representing the percentage threshold of customer allowance.
1. Note that **Overage Billing** is **disabled** if the overage threshold is **not set** or set to ‘0’

## Subscriber Auto Notify / Disconnect ?

<b>Invoice Payment Due based SAND</b>		<input type="checkbox"/> Create / Close Billing Issues <input type="checkbox"/> Notification Emails <input type="checkbox"/> Throttling / Auto Disconnection
Email From:	<input type="text"/>	?
Email To:	<input type="text"/>	?
Email Bcc:	<input type="text"/>	?
Create Billing Issue Date	<input type="text"/>	?
1st notification email date	<input type="text"/>	?
2nd notification email date	<input type="text"/>	?
Disconnection date	<input type="text"/>	?
Throttling date	<input type="text"/>	?
Minimum Amount Owed	<input type="text" value="0.00"/>	?
<b>Invoice SAND Processing Mode</b>		
<input checked="" type="radio"/> Once a Day at a Specified Time		<input type="radio"/> Periodically
Disconnection Time (Server Local Time: 2011-11-11 15:16:47) <input type="text" value="00"/> : <input type="text" value="30"/>		Execute SAND each <input type="text" value="60"/> minutes
<b>Customer Traffic Limit based SAND</b>		<input checked="" type="checkbox"/> Notify Customer <input checked="" type="checkbox"/> Overage Billing / Throttling / Auto Disconnection <input type="checkbox"/> Do not carry over overage top-ups to the next period <input type="checkbox"/> Do not prorate the CAP in the first month
Email From:	<input type="text"/>	?
Email To:	<input type="text"/>	?
Email Bcc:	<input type="text"/>	?
1st notification email threshold [%]	<input type="text"/>	?
2nd notification email threshold [%]	<input type="text"/>	?
Disconnection threshold [%]	<input type="text"/>	?
Overage/Throttling threshold [%]	<input type="text" value="100"/>	?
Calculation Period	<input type="text" value="Based on the last day of the month"/> ?	
<b>Traffic Limit SAND Processing Mode</b>		
<input checked="" type="radio"/> Once a Day at a Specified Time		<input type="radio"/> Periodically
Disconnection Time (Server Local Time: 2011-11-11 15:16:47) <input type="text" value="00"/> : <input type="text" value="50"/>		Execute SAND each <input type="text" value="60"/> minutes

Figure 2.3.1-1 “Operator Details” page – SAND section

## 2.3.2 Override global SAND settings from customer details page

Global, operator SAND settings can be overridden for a particular customer from the ‘network details’ page (see screenshot below). To override the Overage Billing settings the Operator needs to:

1. Set **Status** to **Override Defaults** in the **Subscriber Auto Notification/Disconnection**
2. Set **Overage Threshold** to the value of your liking.

Note that if **Overage Threshold** is **not set** or set to **‘0’** when **Status** is set to **Override Defaults**, the Overage billing check **will be turned off** for the particular customer

**Network Subscriber Auto Notification/Disconnection**

Customer Traffic Limit [GB]  ?

Time of Day Data Usage Exemption  ?

Prorate the CAP in the first month  ?

Carry over overage Top-Ups to the next period  ?

Status  ?

**Override Parameters**

Email From:  ?

Email To:  ?

Email Bcc:  ?

1st notification email threshold [%]  ?

2nd notification email threshold [%]  ?

Disconnection threshold [%]  ?

Overage/Throttling threshold [%]  ?

[Back](#) [Back to Customer Details](#) [Update Customer](#)

Fig 2.3.2-2 “Customer-Network Details” page – SAND section

## 2.4 Billing Issue Auto-Creation/Closure

Billing Issues can now be assigned a type. These types can be defined and customised to the operator’s needs by going to Settings >> Billing Issue Types.

azotel WISP: login: Settings

Recently Viewed Customers

SIMPLer

Inbox (0)

Dashboard Map Customers Invoices Products Network Hotspots Voip Radius Tools **Settings** Logout

**General:**

- Add a new user
- Add/Modify WISP
- Downloads

**Customer:**

- Groups
- Custom Fields
- Post Codes

**Sales Opportunities:**

- Value Added Reseller
- Master Agent
- Regional Sales Manager
- Sales Opportunity Types

**Flexible Tax System:**

- Tax Zones
- Tax Rates

**Billing:**

- Billing Issue Types**
- Payment Gateways

**Templates:**

- Invoice
- Receipt
- Attachments
- End User Portal
- Captive Portal

**Users**

Results 1 - 69 of 69

User ID	Email	WISP	Status
Administrator	info@ardenbroadband.ie	ardenbrisknet	(2) Operator

Figure 2.4-1 Defining Billing Issue Types

From this page, the user can define:

1. The name of the type.
2. Whether this particular type signifies that the customer is over due or not.
3. Whether SAND can automatically create this type of billing issue (only one type can have this trait)
4. Whether SAND can automatically close this type of billing issue.

Back Update Billing Issue Definitions

#### Billing Issue Definitions

Name	Over Due	SAND Can Create	SAND Can Close	
Bad Debt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Delete
Credit Due	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Delete
Non Payment Service Issue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Delete
Over Due	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Delete
Over Due 7 Days Notice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Delete
Over Due Disconnect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Delete
Over Due Suspend	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Delete

Add Blank Row

Figure 2.4-2 Billing Issues Definitions

A column has been added to the Billing Issues table (Customers >> Billing Issues) to show each billing issue's type. Also, the table can be filtered by each defined type of billing issue.

Add

#### Billing Issues List

Results 1 - 9 of 9 Status To Be Displayed : open Type To Be Displayed : All Number of results to display per page : All

Issue Number	Customer	Folder	Invoice ID	Date Reported	Priority	Issue Type	Description	Status
150	Joe Bloggs - Test Customer			11/08/10	3	Over Due	Sample Billing Issue	open
1	maciej		1, 3	20/12/05	3		test	open

Add

Figure 2.4-3 Billing Issues Table

Similarly, when we are adding or modifying a billing issue, a drop-down has been provided for the user to assign a type to the billing issue.

#### Modify an issue

#### Billing Issues

Issue Number: 150

Customer's name: Joe Bloggs - Test Customer - joeb13

Invoice ID list: Add

Invoice ID: Delete

Date Reported: 11/08/2010

Reported By: keith

Issue Type: Over Due

Description: Sample Billing Issue

Figure 2.4-4 Modifying a Billing Issue

## 2.4.1 SAND Billing Issue Automatic Creation & Closure

To enable SAND automatic billing issue creation, there are two things that must be done.

1. Define exactly one billing issue type, which can be created automatically by SAND (see Fig. 2.4-2).
2. Check the “Create Billing Issue” check box under “Invoice Payment Due based SAND” under “WISP Settings”, and specify the “Create Billing Issue Date” (see Fig. 2.4.1-1).

**Subscriber Auto Notify / Disconnect ?**

**Invoice Payment Due based SAND**

☐ Create / Close Billing Issues

☒ Notification Emails

☒ Throttling / Auto Disconnection

Email From:

Email To:

Email Bcc:

**Create Billing Issue Date**

1st notification email date

2nd notification email date

Disconnection date

Throttling date

Minimum Amount Owed

**Invoice SAND Processing Mode**

☒ Once a Day at a Specified Time

Disconnection Time (Server Local Time: 2011-11-11 15:09:56)

☐ Periodically

Execute SAND each  minutes

**Figure 2.4.1-1 SAND Configuration in WISP settings**

With these two steps completed, at its next scheduled execution, SAND will create a billing issue for each customer who has one or more invoices which are sufficiently overdue.

See below for an example of a billing issue that was created automatically by SAND. Note that all relevant details are automatically populated, as you would expect.

**Billing Issues**

Issue Number: 41

Customer's name: Bill Abong - Babong

Invoice ID list: 5 (2010-06-01) - emailed

Invoice ID: 29/07/2010

Date Reported: 29/07/2010

Reported By: SAND

Issue Type: Over Due

Description: Subscriber Auto Create Billing Issue: Invoice Due

Resolution:

History: [29/07/2010 sand] Auto-opened by SAND

Priority: 1

Status: open

Date Closed:

[Update Issue Details >](#) [Delete issue](#)

**Figure 2.4.1-2 Automatic Billing Issue Creation**

Once the invoice is paid, the next time SAND executes, it will automatically close the billing issue. See below, the invoice is now marked as paid and the history has been updated.

**Billing Issues**

Issue Number	41
Customer's name	Bill Abong - Babong
Invoice ID list	<input type="text"/> Add
Invoice ID	5 (2010-06-01) paid Delete
Date Reported	29/07/2010
Reported By	SAND
Issue Type	Over Due
Description	Subscriber Auto Create Billing Issue: Invoice Due
Resolution	<input type="text"/>
History	<div> <div>[29/07/2010 sand] Auto-opened by SAND</div> <div>[29/07/2010 sand] Auto-closed by SAND</div> </div>
Priority	1
Status	closed
Date Closed	29/07/2010

Update Issue Details > Delete issue

**Figure 2.4.1-3 Automatic closure of Billing Issue**

## 2.5 Traffic Limit Based SAND (Throttling Configuration and Properties)

SIMPLer Subscriber Auto Notification / Disconnection (SAND) system has been upgraded to allow Operators to throttle Customers to the appropriate level of downlink/uplink rate after they reach their monthly bandwidth allowance limit. Until now three functionalities were available:

- Email Notification
- Disconnection
- Overage – automatic charge

An additional option has now been added giving Operators the ability to limit a customer's bandwidth speeds (throttle) until more bandwidth has been added to their account. In order to setup the SAND system **Customer Traffic Limit based SAND** (Fig. 2.5-1) must be set to something other than "Off" under the WISP setup (users->Modify WISP).

## Subscriber Auto Notify / Disconnect ?

<b>Invoice Payment Due based SAND</b>		<input type="checkbox"/> Create / Close Billing Issues <input type="checkbox"/> Notification Emails <input type="checkbox"/> Throttling / Auto Disconnection
Email From:	<input type="text"/>	?
Email To:	<input type="text"/>	?
Email Bcc:	<input type="text"/>	?
Create Billing Issue Date	<input type="text"/>	?
1st notification email date	<input type="text"/>	?
2nd notification email date	<input type="text"/>	?
Disconnection date	<input type="text"/>	?
Throttling date	<input type="text"/>	?
Minimum Amount Owed	<input type="text" value="0.00"/>	?
<b>Invoice SAND Processing Mode</b>		<input checked="" type="radio"/> Once a Day at a Specified Time Disconnection Time (Server Local Time: 2011-11-11 15:16:47) <input type="text" value="00"/> : <input type="text" value="30"/>
		<input type="radio"/> Periodically Execute SAND each <input type="text" value="60"/> minutes
<b>Customer Traffic Limit based SAND</b>		<input checked="" type="checkbox"/> Notify Customer <input checked="" type="checkbox"/> Overage Billing / Throttling / Auto Disconnection <input type="checkbox"/> Do not carry over overage top-ups to the next period <input type="checkbox"/> Do not prorate the CAP in the first month
Email From:	<input type="text"/>	?
Email To:	<input type="text"/>	?
Email Bcc:	<input type="text"/>	?
1st notification email threshold [%]	<input type="text"/>	?
2nd notification email threshold [%]	<input type="text"/>	?
Disconnection threshold [%]	<input type="text"/>	?
Overage/Throttling threshold [%]	<input type="text" value="100"/>	?
Calculation Period	<input type="text" value="Based on the last day of the month"/>	?
<b>Traffic Limit SAND Processing Mode</b>		<input checked="" type="radio"/> Once a Day at a Specified Time Disconnection Time (Server Local Time: 2011-11-11 15:16:47) <input type="text" value="00"/> : <input type="text" value="50"/>
		<input type="radio"/> Periodically Execute SAND each <input type="text" value="60"/> minutes

Figure 2.5-1: Customer Traffic Limit Based SAND

The following options are available:

1. **Notification Emails** – Customer will only receive notification emails about their usage, but no further action will occur.
2. **Notification Emails + Overage Billing/Throttling/Auto Disconnection** – Customer will receive notification emails and appropriate action will take place if the customer reaches their limit.
3. **No boxes are checked:** No action taken.

*Note: A customer's bandwidth limit is calculated based on their product subscriptions.*

If a field threshold is left blank then the no action is taken for that process.

*Note: SAND settings can be overridden on a per customer basis under their “Network details” tab (Fig. 2.4-1)*

**Figure 2.5-2: SAND Customer Override**

## 2.5.1 Overage/Throttling Priorities

### 1. Customer has an “Overage” product assigned to their subscriptions

The customer will be automatically charged if they reach their bandwidth limit.

A customer’s bandwidth limit is recalculated on the last day of each month. If a customer paid for 5 GB of overage but only used 4.5 GB then 0.5 GB will be carried forward to their allowance for the next month. There is a setting to make sure that CAP is not carried over if operators need to enable this.

### 2. Customer does not have an “Overage” product assigned & Customer is assigned to a bucket with a throttling threshold set

The customer will be automatically moved to the “throttle” bucket that is associated with their regular bucket. Throttling can be set up on the “Traffic Shaping Bucket” page (Fig. 2.5.1-1). To get to this page, click on the “Network” tab → “Gateway Details” → “Table View” (Fig. 2.5.1-2).



**azotel** WISP: login: Traffic Shaping Bucket

Recently Viewed Customers

inbox (0)

Dashboard Map Customers Invoices Products Network Hotspots Voip Radius Tools Settings Logout QuickSearch ...

Sites details Base Stations details Equipment details Gateways details Interface details

**Gateway Test Gateway ( wib 100 )**

ID: 1  
Name: Test Gateway  
Type: regular  
Status: active  
Version: 20100624  
Uptime: 1:09

	Download	Upload
Max Bandwidth	32000 kbps	32000 kbps
Whitelist rate	1024 kbps	1024 kbps
Mgmt rate	32000 kbps	32000 kbps
P2P rate	1024 kbps	512 kbps

Back

**Traffic Shaping Buckets**

ID	Description	Downlink rate (kbits/s)	Uplink rate (kbits/s)	Throttling (%)	Usage (Throttled)	Priority
1	Bus 2M - 5:1 - A	2048	1024		4 (0)	<input type="checkbox"/> Customers Graphs
2	Res 1M - 20:1 - A	1024	512		5 (0)	<input type="checkbox"/> Customers Graphs
						<input type="checkbox"/> Add

Back Update Buckets Table

Note : Buckets 'In use' cannot be deleted.

Figure 2.5.1-1: Traffic Shaping Bucket Setup

**azotel** WISP: login: Gateways Details

Recently Viewed Customers

inbox (0)

Dashboard Map Customers Invoices Products Network Hotspots Voip Radius Tools Settings Logout QuickSearch ...

Sites details Base Stations details Equipment details Gateways details Interface details

Results 1 - 7 of 7 Search : Number of results to display per page : 50

Gateway ID	Name	WIB number	Status	Active Subscribers	Subscribers License	Traffic Shaping Bucket	WIB routes	Graphs	Info
1	Test Gateway	100	active	7	200	Table view	Routes View	Graph view	EPBRHG

Add

Figure 2.5.1-2: Gateway Details

When a customer has been moved to the throttle bucket it will be indicated in on the customer details page as in Fig. 2.4.1-3. A customer can be manually moved back to a regular bucket in the normal manner in which buckets are assigned (Fig. 2.4.1-4.) However, unless additional bandwidth is added (or the SAND system is disabled for this customer) they will be moved back to the throttle bucket during the next SAND run. Customers will automatically be moved back to their regular bucket at the beginning of the next month.

*Note: WIB files must be updated after making bucket changes.*

<b>General:</b> <a href="#">Modify Customer</a> <a href="#">Customer Portal</a> <a href="#">Sales Opportunities</a> <a href="#">Email/FTP details</a> <b>Invoicing:</b> <a href="#">Custom Invoice</a> <a href="#">Invoices Details</a> <a href="#">Subscription Details</a> <a href="#">Credit Card Details</a> <a href="#">Bank Account Details</a> <a href="#">Prepayments</a> <a href="#">Credits</a> <a href="#">Free Service Bonus</a> <a href="#">Statement</a> <a href="#">Billing Issues</a> <b>Network:</b> <a href="#">Modify Network Details</a> <a href="#">Modify IP Table</a> <a href="#">Modify Equipment</a> <a href="#">Modify Radius</a> <a href="#">Send network details</a> <a href="#">Maintenance</a>	<b>Customer Account</b> ( <a href="#">modify</a> ) ( <a href="#">history</a> ) Customer ID: 19 Invoicing ID: Bill2 Nickname: Bill2 Name: Billing Test2 Status: <b>current</b> Changed: 14/10/09 <b>Financial Summary</b> ( <a href="#">statement</a> ) Prepayments (Amount Remaining): USD 0.00 CR Credits (Amount Remaining): USD 0.00 CR Customer Balance: <b>USD 278.40 DR</b> <b>Address</b> ( <a href="#">modify</a> ) ( <a href="#">history</a> ) Billing Address: Street: Town: Country: Installation Area: Community Code: GPS Coordinates:	<b>Contact Details</b> ( <a href="#">modify</a> ) ( <a href="#">history</a> ) Email: <a href="mailto:stephen@azotel.com">stephen@azotel.com</a> Accounts Email: Supports Email: Telephone ? Fax: Website: Contacts ?	<b>General</b> ( <a href="#">modify</a> ) ( <a href="#">history</a> ) Type: <b>customer home</b> Start Date: 19/11/07 Initial Contact Date: 19/11/07 Installation Date: 19/11/07 Importance: 1 Customer Tracking: Normal Marketing Code: Marketing Emails: No Reference: Reference Fee: Reference Fee Status: Sales Team Member:
--	---	---	--

<b>Network Details</b> ( <a href="#">modify</a> ) ( <a href="#">history</a> ) Monitor: <b>no monitor</b> Gateway: <b>No Gateway assigned</b> Bucket: <b>No Bucket assigned</b>	<b>End User Portal</b> ( <a href="#">modify</a> ) ( <a href="#">history</a> ) <a href="#">Open EUP</a> <a href="#">Copy Link</a> Portal Username: Bill2 Portal Password: Bill2 Terms & Conditions: Accepted
---	---

Figure 2.5.1-3: Customer Details

General	Contact details	Banking details	Network details	Back	Back to Customer Details	Update Customer
---------	-----------------	-----------------	-----------------	------	--------------------------	-----------------

**Customer Identification**

Name	Billing Test2
Invoicing ID	Bill2
Nickname	Bill2

**Main Network Details**

Installation Date	<input type="text" value="Nov"/> <input type="text" value="19"/> <input type="text" value="2007"/>	Auto-Prov IP type	<input type="text" value="Public"/> <input type="checkbox"/> Auto-Prov NAT ?
Gateway	<input type="text"/>	Auto-Prov IP number	<input type="text" value="1"/> *
Tower / Site	<input type="text"/>	Monitor	<input type="text" value="no monitor"/> <input type="checkbox"/> Customer Equipment Graphs ?
Traffic Shaping Bucket	<input type="text"/>		

**Network Protocols Handling**

Figure 2.5.1-4: Customer Network Details

*Note: Customers cannot be moved to the throttle bucket manually.*

- 3. Customer does not have an “Overage” product assigned & Customer is not assigned to a bucket with a throttling threshold set**

No action will be taken.

## 2.5.2 Disconnect/Overage/Throttling Priority

- 1. Customer has “Overage” product assigned**

Overage action occurs. See 2.5.1 (1.)

- 2. Customer does not have an “Overage” product assigned & Customer is assigned to a bucket with a throttling threshold set**

Throttling action occurs. See 2.5.1 (2.)

- 3. Customer does not have an “Overage” product assigned & Customer is not assigned to a bucket with a throttling threshold set**

The customer will be disconnected if they reach their allowed percentage of their bandwidth limit (as calculated by their assigned subscriptions and the SAND disconnect percentage). The customer will be automatically reconnected at the end of the month.

- 4. Customer does not have an “Overage” product assigned & Customer is not assigned to a bucket with a throttling threshold set & Customer did not reach disconnection threshold.**

No action will be taken.

## 2.5.3 Customer Reconnection, Payment Lodgement and Notification

Throttled customers who pay off their invoice(s) through the End User Portal (Fig. 2.5.3-1) or send in a payment, which is lodged as an EFT, or Non-EFT payment (Fig. 2.5.3-2, 2.5.3-3) will be automatically moved back to their regular bucket. Notifications of this will be sent to the Operator (Fig 2.5.3-4).

Home Account

Account Holder

Account ID	JFoolbar
Customers Name	JFoolbar
Current Pay Method	Credit Card - 3522
Auto Payment	

Payment Details

Invoice Number: 3  
 Invoice Date: 2036-07-02  
 Amount: 66.96

Credit Card Details

Credit Card Number \*: 3522  
 Expiry Date \*: 00/2036  
 Month Year

Credit Card Billing Address \*

First Name: Joe  
 Last Name: Foolbar  
 Address: Brooklyn,  
 City: New York  
 Post / ZIP Code: 000000

Process Payment  
 Update Credit Card  
 Cancel

If you would like to update your credit card details please click on the 'Update Credit Card' button.

Figure 2.5.3-1: End User Portal payment

Select All	Cust ID	Invoicing ID	Name	Invoice Date	Amount	Discount Allowed	Narrative	Invoice No.	Available Prepayments
Generate									
<input type="checkbox"/>	1737	01EL09	Elisa Lucchesi	21 Feb 2009	60.00	0.00		19	0.00
<input type="checkbox"/>	1737	01EL09	Elisa Lucchesi	21 Jan 2009	298.80	0.00		6	0.00
<input type="checkbox"/>	1737	01EL09	Elisa Lucchesi	08 Jun 2009	120.00	0.00		27	0.00
<input type="checkbox"/>	1746	1000	jon norman	25 Aug 2009	150.00	0.00		35	0.00
<input type="checkbox"/>	1739	123456	James Powis	21 Jan 2009	874.80	0.00		1	0.00
<input type="checkbox"/>	1739	123456	James Powis	16 Mar 2009	0.00	0.00		17	0.00
<input type="checkbox"/>	1738	bobama1	Test Customer	20 Feb 2009	108.00	0.00		23	0.00
<input type="checkbox"/>	1742	dduck1	Donald Duck	08 Jun 2009	110.00	0.00		28	0.00
<input type="checkbox"/>	1742	dduck1	Donald Duck	08 Jun 2009	100.00	0.00		25	0.00
<input type="checkbox"/>	1742	dduck1	Donald Duck	13 Mar 2009	573.85	0.00		36	0.00
<input type="checkbox"/>	1742	dduck1	Donald Duck	13 Apr 2009	573.85	0.00		38	0.00
<input type="checkbox"/>	1743	nkidman	Nicole Kidman	08 Jun 2009	120.00	0.00		29	0.00
<input type="checkbox"/>	1743	nkidman	Nicole Kidman	08 Jun 2009	120.00	0.00		30	0.00
<input type="checkbox"/>	1743	nkidman	Nicole Kidman	08 Jun 2009	120.00	0.00		31	0.00
<input type="checkbox"/>	1743	nkidman	Nicole Kidman	08 Jun 2009	80.00	0.00		26	0.00
<input type="checkbox"/>	1743	nkidman	Nicole Kidman	08 Jun 2009	120.00	0.00		32	0.00
<input type="checkbox"/>	1743	nkidman	Nicole Kidman	08 Jun 2009	120.00	0.00		33	0.00
<input type="checkbox"/>	1745	test2	Test2	05 Jun 2009	240.00	0.00		34	0.00
Generate									

stats map customers invoices products network hotspots voip radius tools users e-mail

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Figure 2.5.3-2: Generating Lodgment (1)

General:

Lodgements >>

Invoices >>

The database was updated successfully for the customers listed below.

Lodgement Details:

Reference: PP2 [6]

Narrative:

Date: 11/11/11

Type: cash

Invoicing ID	Invoice No	Invoice Amount	Payment Amount	Discount Allowed	Narrative	Actual Payment
Bill2	22	33.00	33.00	0.00		33.00
		Total Amount:	33.00			

Figure 2.5.3-3: Generating lodgment (2)




Figure 2.5.3-4: Notification Email

## 2.6 SAND Excluded Days of Disconnection

As discussed in Section 1.2.1.3, an Operator has the option to exclude certain days of the week and certain calendar days on which SAND will not run. This can be set in the Global WISP settings. In order to find these settings, Go To → Users → Add/Modify WISP.

**SAND run - exclude days of disconnection**

Exclude days of week ☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday

Select days to be excluded  Nov 11 2011 [Add Day ?](#)

Excluded days  [Delete](#)

Figure 2.6-1 “SAND run – exclude days of disconnection” WISP settings

### 1. Exclude days of week

An Operator has the option to select particular days of the week on which to exclude SAND runs. An example of where this is particularly useful is if an Operator does not open on a Sunday and if they are not able to provide a call in or support service; an Operator can select to exclude Sundays from SAND runs. This will ensure that customers are not disconnected on days on which an Operator will not be able to provide support.

### 2. Select days to be excluded

An Operator will also have the option to select particular calendar days on which to exclude SAND runs. An example of where this is particularly useful is if an Operator would like to exclude days on which national holidays fall on. This is similar to the option above, however this allows operators to select specific days of the year i.e. 25<sup>th</sup> December 1<sup>st</sup> January and the 4<sup>th</sup> July.

### 3. Excluded days

This field outlines the days that the Operator has chosen to excluded using the select days to be excluded option. This will display the days selected using a dropdown list. This field will also give the Operator the option to delete certain days where necessary.

## 2.7 Operator emails

An additional email type has been added that can be customized by the Operator under global WISP settings (Fig. 2.6-1). This only needs to be set if the default e-mail notification text is not sufficient.

*Sand\_traffic\_throttling\_treshold*

**Figure 2.6-1: Operator Emails**

The remainder of the customizable traffic based SAND email types are:

*sand\_traffic\_overage\_treshold*

*sand\_traffic\_disconnection\_treshold*

*sand\_traffic\_email\_treshold\_1*

*sand\_traffic\_email\_treshold\_2*

An additional email type has been added that can be customized by the Operator under global WISP settings (Fig. 2.6-2). This only needs to be set if the default e-mail notification text is not sufficient.

*Sand\_invoice\_throttling\_date*

The screenshot shows a web interface titled "Operator Emails ?". It contains a form with the following elements:

- Email:** A label for the email type.
- New Type:** A text input field.
- Type:** A dropdown menu currently showing "subscriber\_settings".
- Subject:** A text input field.
- Body:** A large text area for the email content.
- Buttons:** "Add new type" and "Delete".

**Figure 2.6-2: Operator Emails**

The remainder of the customizable invoice based SAND email types are:

*sand\_invoice\_email\_date\_1*  
*sand\_invoice\_email\_date\_2*  
*sand\_invoice\_disconnection\_date*  
*sand\_invoice\_throttling\_date*

*lodgement\_failure\_email\_1*  
*lodgement\_failure\_email\_2*  
*lodgement\_failure\_email\_3*  
*lodgement\_failure\_disconnection*

## 2.8 Ability to defer SAND and exclude disconnection on specific days

SAND (Subscriber Auto Notification/Disconnection) system has been improved to allow an Operator to 1) defer its running for individual customers until a specified date as well as 2) select days when SAND will not disconnect customers.

1) The first option is customer based, meaning SAND status can be overwritten on per customer basis (fig. 2.8-1)

The screenshot shows a web interface titled "Billing Subscriber Auto Notification/Disconnection". A red rectangular box highlights the following controls:

- Status:** A dropdown menu with "Deferred" selected.
- Deferred to:** A date selector showing "Jan 3 2012".

**Fig. 2.8-1. SAND status - "Deferred"**

The “Deferred to” option allows an Operator to defer SAND until the date chosen. Unlike option 2) option 1) will completely disable the SAND system until the specified date. That means that notifications, overage charges, and throttling will not take place along with not disconnecting the customer. The customer's current SAND status can be found on the “customer details” page (Fig 2.8-2.)

The screenshot displays the 'Billing Details' section of a customer's profile. A red box highlights the 'SAND' status, which is 'Deferred to: 03/01/12'. Other details include Invoicing Status (Yes), Payment Method (credit card - visa), Frequency (1 month(s)), Credit Days, Send Method (email to customer), and VAT / TAX Exemption (No). The 'Financial Summary' shows Prepayments (USD 0.00 CR), Credits (USD 0.00 CR), and a Customer Balance (USD 16.40 DR). The 'Next Invoice Details' show a Date of 19/11/08 and a Total Amount of USD 11.00. The 'Credit Card Details' section shows a Visa card ending in 4444, expiring 01/2015. The 'Bank Account Details' section indicates no bank account details are available. The 'Subscription Details' section is partially visible at the bottom.

Billing Details		Financial Summary		Last 5 Invoices	
Invoicing Status	Yes	Prepayments	USD 0.00 CR	No	Date
Payment Method	credit card - visa	(Amount Remaining)		28	19/11/08
Frequency	1 month(s)	Credits	USD 0.00 CR	22	19/10/08
Credit Days		(Amount Remaining)		21	19/09/08
Send Method	email to customer	Customer Balance	USD 16.40 DR	20	19/08/08
VAT / TAX Exemption	No			19	19/07/08
Folder	SAND	Next Invoice Details			
	Deferred to: 03/01/12	Date	19/11/08		
		Total Amount	USD 11.00		

Credit Card Details				
Number	Expiration Date	Holder	Type	First Name
*****4444	01/2015	Visa	Visa	

Bank Account Details		
Bank Account Number	Bank Sort Code	Bank Online F
No Bank account Details available		

Subscription Details					
Current Recurring Products					

**Fig. 2.8-2. Information about current SAND status**

After the date specified SAND will run again and the customer's SAND status will be changed back to “default”.

If you wish to change a customer's SAND setting you can do so under their Network or Billing details. Network settings control the traffic limit based SAND whereas billing details control the invoice payment due based SAND and the lodgement failure SAND.

2) Another vital improvement for Operators is the ability to specify the days on which SAND will not be able to disconnect customers. Operators can specify days of the week (i.e. weekend) or specify the exact dates when SAND should not disconnect the service (Fig. 2.8-3).

*Note: Operators should take "Disconnection Time" into consideration when selecting exclusion days/dates. For example if the disconnection time is 23:50 and the operator doesn't want customers to be disconnected over the weekend they should check off Friday and Saturday as opposed to Saturday and Sunday.*



☒ Once a Day at a Specified Time      ☐ Periodically  
 Disconnection Time (Server Local Time: 2012-01-03 11:49:31)      Execute SAND each  minutes

**SAND run - exclude days of disconnection**

Exclude days of week      ☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday

Select days to be excluded          ?

Excluded days

**Time of Day Data Usage Exemption**

Specify time to be excluded from usage      From:    To:

Excluded Periods     

Fig 2.8-3. SAND excluded days

## 2.9 Future Post Dates

A feature has been added that allows a SIMPLer user to schedule a customer's status to be changed to post at some date in the future. Set a customer's status to post in the normal way and choose a date for the status change to take effect. (See fig. 2.9-1) SAND will check to see if any customer's are due to be set to post each time it runs.

**Other Details**

Status     

Importance     

Type     

Customer Tracking     

Marketing Code     

Marketing Emails     

Fig. 2.9-1: Future Post Dates setting

Back on the customer details page, we can see that the customer is still set to current but that there is a note underneath saying that the status will change to post at the date shown. (See fig. 2.9-2)

Fig. 2.9-2: Customer Details

## 2.10 Weekly Based SAND

SAND (Subscriber Auto Notification/Disconnection) system has been upgraded to allow calculation to run on a weekly basis.

Weekly based SAND will start running at the day specified under global SAND settings (Fig. 2.10-1) and will do any overage CAP recalculation/unthrottle customers on the last day of the week specified, i.e if SAND starts on Wednesday it will reset customer usage data next Tuesday and will start again next Wednesday. All traffic allowance assigned to products/ customer accounts will be treated as a weekly allowance if weekly SAND is turned on.

Fig. 2.10-1: Calculation Period under Global WISP Settings

## 2.11 Automatic Reconnection Fee

A new feature has been added to the SIMPLer system that allows Users to assign a product of “reconnection” type to the customer account. Customers who were disconnected/throttled by SAND (Subscriber Auto Notification/Disconnection) system can be charged with this reconnection fee while being reconnected.

In order to enable this feature create this “reconnection product”, i.e. go to the “products” main menu and click “Add” button (Fig. 2.11-1).

Search for information about products

Dashboard Map Customers Invoices **Products** Network Hotspots Voip Radius

Products Campaigns Packages Revenue / customer

[Revenue / customer](#)

Results 1 - 10 of 32

Product Code	Product Type	Product Description	Nominal	Price	Summary TAX Rate [%]	Rounding Algorithm	Traffic Allowance	Subscription Default Type	Subscrip Defaul Validity
10 Gb	Import	Additional 10Gb traffic allowance	-	10.00	10.0000 %?	down	10 GB	Recurring	Free Service: 1
5Gb	Standard	5Gb traffic allowance	0004734	10.00	10.0000 %?	arithmetic	5 GB	Recurring	
70test1	Standard		-	0.00	21.0000 %?	arithmetic	-	Recurring	
721htoken	Standard	this is a description	-	0.83	10.0000 %?	arithmetic	-	Recurring	
Add Ph Chg	Standard	Additional Phone Charges	-	0.00	10.0000 %?	arithmetic	-	Recurring	
BASIC	Standard	Basic Internet Service	0004734	20.00	10.0000 %?	arithmetic	2 GB	Recurring	
Camp Test	Standard	Campaign Test	-	-100.00	0.0000 %?	arithmetic	-	Recurring	Cycles: 1
Credit	Standard	Credit	-	-5.00	10.0000 %?	arithmetic	-	Recurring	
DP Res 1M	Standard	Digital Phone - Basic Residential	-	21.99	10.0000 %?	arithmetic	-	Recurring	
HMQTR	Standard	Home - Qtr in Advance	-	180.00	10.0000 %?	arithmetic	-	Recurring	

Result Page: 1 2 3 4

Add

Fig. 2.11-1. “Products” page.

Create this product specifying all required details. Select “Reconnection” from “Subscription Default Type” drop-down list (Fig. 2.11-2).

Modify a product

Product Code	REC
Product Description	Reconnection Fee
Product Type	Standard ?
Import Formula	%IMPORTVALUE% ?
Price (ex. VAT/TAX)	10.00
Product Nominal Account	<input type="text"/> <input type="button" value="Delete"/>
	Nominal: <input type="text"/> Description: <input type="text"/> <input type="button" value="Add"/>
TAX Mode	Default
TAX Zone	US - Florida State Taxes
Summary TAX Rate [%]	10.0000
Nett Amount Rounding Method	arithmetic
<b>Projected Total Price (inc. TAX)</b>	<b>11.00</b>
Traffic Allowance [GB]	0
<b>Subscription Default Type</b>	<b>Reconnection</b>
Subscription Default Cycles	<input type="text"/>
Subscription Default Valid From	<input type="text"/>
Subscription Default Valid To	<input type="text"/>
Subscription Default 'Use Free Service Bonus'	Yes
Turn Off Prorating	No
Deferred	No

**Note:** Product cannot be deleted as it is assigned to 20 customer(s)

Fig. 2.11-2. Create “Reconnection” product.

Go to the customer account and click on “Subscription details >>” link (Fig. 2.11-3).

<p><b>General:</b></p> <ul style="list-style-type: none"> <li>Modify Customer</li> <li>Customer Portal</li> <li>Sales Opportunities</li> <li>Email/FTP details</li> </ul> <p><b>Invoicing:</b></p> <ul style="list-style-type: none"> <li>Custom Invoice</li> <li>Invoices Details</li> <li><b>Subscription Details</b></li> <li>Credit Card Details</li> <li>Bank Account Details</li> <li>Prepayments</li> <li>Credits</li> <li>Free Service Bonus</li> <li>Statement</li> <li>Billing Issues</li> </ul> <p><b>Network:</b></p> <ul style="list-style-type: none"> <li>Modify Network Details</li> <li>Modify IP Table</li> <li>Modify Equipment</li> </ul>	<p><b>Customer Account</b> (m)</p> <p>Customer ID 19</p> <p>Invoicing ID Bill2</p> <p>Nickname Bill2</p> <p>Name Billing T</p> <p>Status <b>current</b> Change</p> <p><b>Financial Summary</b> (g)</p> <p><b>Prepayments</b> (Amount Remaining)</p> <p><b>Credits</b> (Amount Remaining)</p> <p><b>Customer Balance</b></p> <p><b>Address</b> (modify...) (history...)</p> <p><b>Billing Address:</b></p> <p>Street</p> <p>Town</p> <p>Country</p>
---	--

Fig. 2.11-3. “Subscription details >>” link.

On the “Subscription Details” page select your previously created reconnection product and add it to the subscription list (Fig. 2.11-4). Click “Update Subscription Table” in order to changes take effect on customer subscription details.

Customer Bill2 ( 19 )

ID	19
Name	Biting Test2
Nickname	Bill2
Invoicing ID	Bill2

Back Update Subscription Table

Add Product (manage...)

Code	REC
Description	Reconnection Fee
Price	10.00
Add Product	

Customer Subscription table

ID	Product Code	Product Type	Product Description	Quantity	Price	Discount %	Premium %	TAX Mode	TAX Zone	Summary TAX Rate %	TAX Rounding	Total Amount	Cycles	Type	Valid dates
21	10-Gb	Import	Additional 10Gb traffic allowance	1	10.00	0.00	0.00	Default	US - Florida State Taxes	10.0000	down	11.00		Recurring	
Import Formula: VNIMPORTVALUEVN + 20															
138	REC	Standard	Reconnection Fee	1	10.00	0.00	0.00	Default	US - Florida State Taxes	10.0000	arithmetic	11.00		Reconnection	
												Total:	22.00		

Fig. 2.11-4. “Subscription Details” list

On customer account you will see that customer has “Reconnection Product” assigned (Fig. 2.11-5).

Bank Account Details (modify...) (history...)

Bank Account Number	Bank Sort Code	Bank Online Reference	Bank Account Name	Type
No Bank account Details available				

Subscription Details (modify...) (history...) (consolidate subscriptions...)

Current Recurring Products

Code	Description	Qty	Price	Import	Disc.	Premium	TAX / VAT Rate	Total	Valid Dates	Cycles Left	Traffic Allowance	Use Free Service Bonus
10 Gb	Additional 10Gb traffic allowance	1	10.00	Y	0.00 %	0.00 %	10.0000 % ?	11.00			10 GB	Yes
								Total Amount (USD)	11.00			
to be paid each frequency period (including TAX / VAT)												

Reconnection Products

Code	Description	Qty	Price	Import	Disc.	Premium	TAX / VAT Rate	Total	Valid Dates	Cycles Left	Traffic Allowance	Use Free Service Bonus
REC	Reconnection Fee	1	10.00	N	0.00 %	0.00 %	10.0000 % ?	11.00				Yes
								Total Amount (USD)	11.00			
to be paid each time customer is reconnected. (including TAX / VAT)												

Free Service Bonus (modify...) (history...)

Date	Type	Referral	Cycles	Cycles Left	Months	Months Left	Status
No free service bonuses available							

Fig. 2.11-5 “Reconnection Products” on customer account

This assigned product is non-recurring product. It is just a notification to the SIMPLer system that the customer should be charged for reconnection when reconnection occurs.

Now assume that customer has outstanding invoices and was disconnected by SAND system (Fig. 2.11-6)

Customer Account ([modify..](#)) ([history..](#))

**General:**  
 Modify customer >>  
 Customer Portal >>  
 Sales Opportunities >>  
 (0 open issues)  
 Email/FTP details >>

**Invoicing:**  
 Custom Invoice >>  
 Invoices details >>  
 Subscription details >>  
 Credit Card details >>  
 Bank Account details >>  
 Prepayments >>  
 Credits >>  
 Free Service Bonus >>  
 Statement >>  
 Billing Issues >>  
 (0 open issues)

**Network:**  
 Modify network details >>  
 Modify IP table >>  
 Modify Equipment >>

Customer ID	1
Invoicing ID	johndoe
Nickname	johndoe
Name	John Doe
Status	<b>post</b> Changed: 24 May 2011 Reason: Subscriber Auto Disconnection: Invoice Due Effective Date: 24 May 2011

**General** ([modify..](#)) ([history..](#))

Type	customer home
Start Date	19 Sep 2010
Initial Contact Date	25 Aug 2010
Installation Date	25 Aug 2010
Importance	3
Customer Tracking	Normal
Marketing Code	
Marketing Emails	No
Reference	Peter Jones (pjones01)
Reference Fee	
Reference Fee Status	
Value Added Reseller	
Master Agent	
Regional Sales Manager	
Sales Team Member	

Fig. 2.11-6. Customer disconnected by SAND system

The customer can be reconnected using the following methods:

1. EFT / non-EFT payment (i.e. "invoices->Add EFT Payment/Add non-EFT Payment")
2. Custom CC Payment
3. Custom E-check Payment
4. Direct Customer Payment in EUP (End User Portal)
5. Moving Customer manually from "post" to "current" state

Once-off "Reconnection Fee" subscription will be added to the customer account and will be added to the next customer's invoice (Fig. 2.11-7).

BILLING

Subscription details (modify) (history)

Current Recurring Products

Code	Description	Qty	Price	Import	Disc.	Premium	TAX / VAT Rate	Total	Valid Dates	Cycles Left	Traffic Allowance	Use Free Service Bonus
REC	Reconnection Fee [25 May 2011]	1	10.00	N	0.00 %	0.00 %	21.00 % ?	12.10		1		
INT	TEST 2	1	10.17	N	0.00 %	0.00 %	10 % ?	11.19				Yes
INT	Monthly Internet 3.5 Meg 125 Gig Package	1	49.23	N	0.00 %	0.00 %	10 % ?	54.16			1 GB	Yes
Total Amount (EUR)								77.45				
to be paid each frequency period (including TAX / VAT)												

Reconnection Products

Code	Description	Qty	Price	Import	Disc.	Premium	TAX / VAT Rate	Total	Valid Dates	Cycles Left	Traffic Allowance	Use Free Service Bonus
REC	Reconnection Fee	1	10.00	N	0.00 %	0.00 %	21.00 % ?	12.10				Yes
Total Amount (EUR)								12.10				
to be paid each time customer is reconnected. (including TAX / VAT)												

Fig. 2.11-7. Reconnection subscription

The customer can also be disconnected by reaching their bandwidth allowance and they will be reconnected at the

beginning of the new period. The reconnection fee will be added to customer account by the SAND system. An other way to reconnect is by buying additional bandwidth directly from the EUP (Fig. 2.11-8).

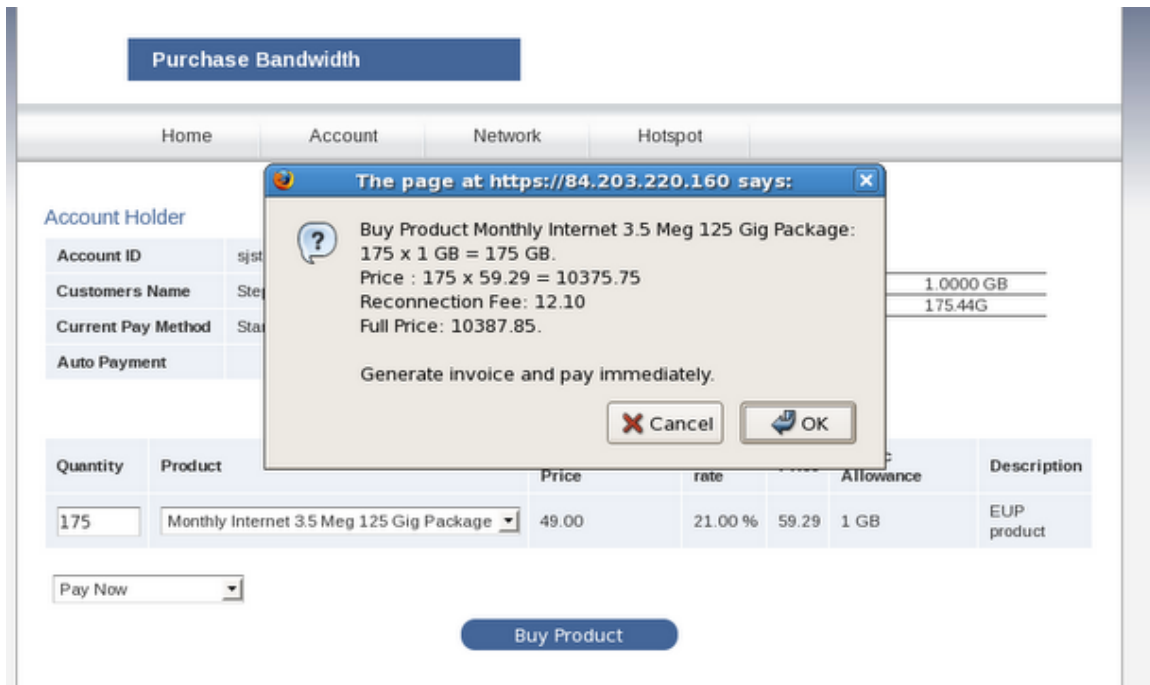


Fig. 2.11-8. Buy Bandwidth Product and reconnect customer

An example of an invoice is shown on figure 2.11-9.

River House Blackpool Park  
Cork,

Tel:

Email: pawel@azotel.com

### **Balance Forward**

Previous Balance Owinn

9676.37

### **Subscription Details**

Qty Product

\$

175.00 Monthly Internet 3.5 Meg 125 Gig Package [25 May  
2011]

8575.00

1.00 Reconnection Fee [25 May 2011]

10.00

*Net Amount*

8585.00

*Tax Amount*

1802.85

*Invoice Total*

10387.85

*Previous Balance*

9676.37

***Total Amount Due***

**20064.22**

Fig. 2.11-9. Invoice Example.



## 2.12 Carry Over unused top ups to next month

The enhanced ability to select whether or not unused top ups can be carried over to the next month is now available as a feature in SAND. If you do not wish for tops ups to be carried over to the next month please check the box “Do not carry over overage top-ups to the next period” under the Customer Traffic limit Based SAND settings in SIMPLer. If you wish for these top ups to carry over please leave this box unchecked as per fig. 2.12-1.

**Customer Traffic Limit based SAND**

- ☒ Notify Customer
- ☒ Overage Billing / Throttling / Auto Disconnection
- ☐ Do not carry over overage top-ups to the next period
- ☐ Do not prorate the CAP in the first month

Email From:  ?

Email To:  ?

Email Bcc:  ?

1st notification email threshold [%]  ?

2nd notification email threshold [%]  ?

Disconnection threshold [%]  ?

Overage/Throttling threshold [%]  ?

Calculation Period  ?

**Traffic Limit SAND Processing Mode**

☒ Once a Day at a Specified Time ☐ Periodically

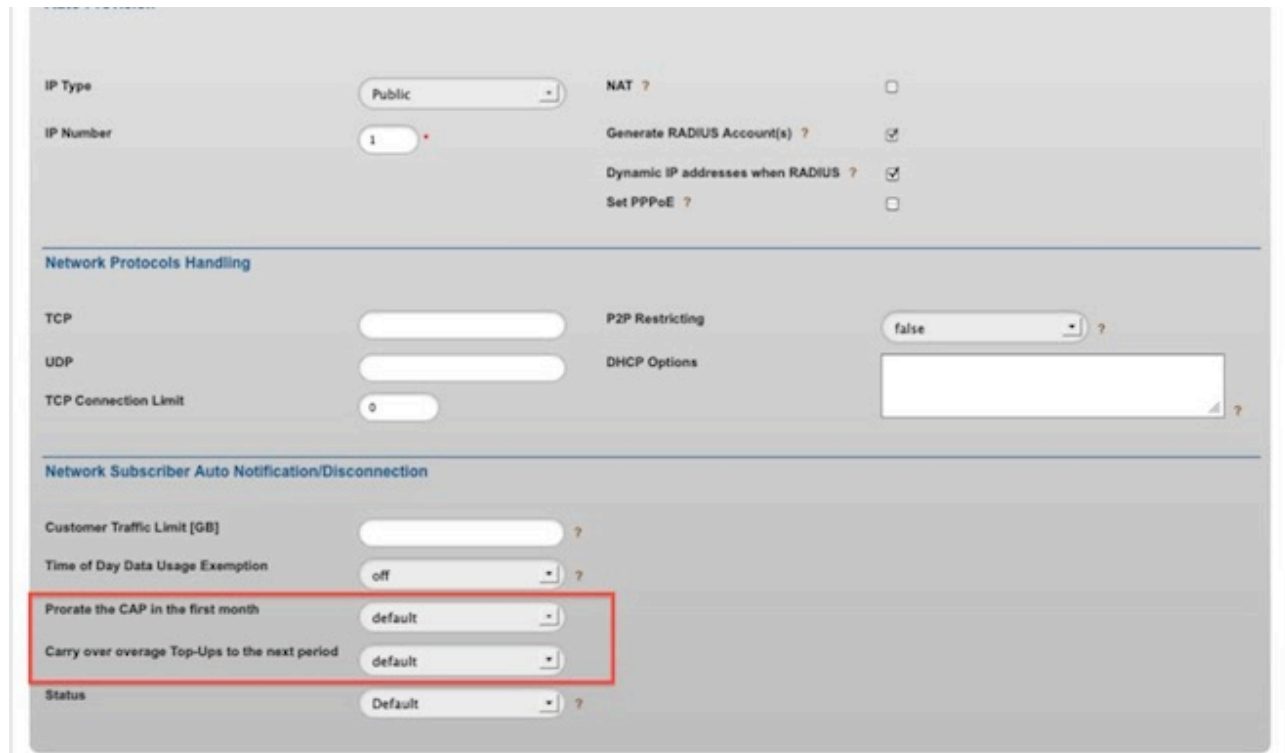
Disconnection Time (Server Local Time: 2011-12-29 16:49:00)

Execute SAND each  minutes

**Fig. 2.12-1: Do not carry over top ups to the next period**

Operators can also check this setting on a per customer basis under the network details as per fig. 2.12-2.





IP Type: Public

IP Number: 1

NAT ? ☐

Generate RADIUS Account(s) ? ☒

Dynamic IP addresses when RADIUS ? ☒

Set PPPoE ? ☐

---

**Network Protocols Handling**

TCP:

UDP:

TCP Connection Limit: 0

P2P Restricting: false

DHCP Options:

---

**Network Subscriber Auto Notification/Disconnection**

Customer Traffic Limit [GB]:

Time of Day Data Usage Exemption: off

Prorate the CAP in the first month: default

Carry over overage Top-Ups to the next period: default

Status: Default

Fig. 2.12-2: Per customer settings

## 2.13 Prorate initial month usage flag

The enhanced ability to select whether or not CAP is prorated in the first month of billing is now available as a feature in SAND. If you do not wish for CAP to be prorated in the first month please check the box “Do not prorate the CAP in the first month” under the Customer Traffic limit Based SAND settings in SIMPLer. If you wish for CAP to be prorated please leave this box unchecked as per fig. 2.13-1.

**Customer Traffic Limit based SAND**

☒ Notify Customer

☒ Overage Billing / Throttling / Auto Disconnection

☐ Do not carry over overage top-ups to the next period

☐ Do not prorate the CAP in the first month

Email From:  ?

Email To:  ?

Email Bcc:  ?

1st notification email threshold [%]  ?

2nd notification email threshold [%]  ?

Disconnection threshold [%]  ?

Overage/Throttling threshold [%]  ?

Calculation Period  ?

**Traffic Limit SAND Processing Mode**

☒ Once a Day at a Specified Time ☐ Periodically

Disconnection Time (Server Local Time: 2011-12-29 16:49:00)

Execute SAND each  minutes

Fig. 2.13-1: Do not prorate the CAP setting

Operators can also check this setting on a per customer basis under the network details as per fig. 2.13-2.

IP Type  ?

IP Number  ?

NAT ? ☐

Generate RADIUS Account(s) ? ☒

Dynamic IP addresses when RADIUS ? ☒

Set PPPoE ? ☐

**Network Protocols Handling**

TCP  ?

UDP  ?

TCP Connection Limit  ?

P2P Restricting  ?

DHCP Options  ?

**Network Subscriber Auto Notification/Disconnection**

Customer Traffic Limit [GB]  ?

Time of Day Data Usage Exemption  ?

Prorate the CAP in the first month  ?

Carry over overage Top-Ups to the next period  ?

Status  ?

Fig. 2.13-2: Per customer settings

## 2.14 SAND minimum Amount Owed

A new option has been added to the SAND (Subscriber Auto Notification / Disconnection) feature that allows operators to specify a minimum amount owed which SAND runs for. Earlier SAND ran for each customer who was due regardless of the amount due. Now it is possible to set the minimum amount. If a customer owes less than a specified value SAND will not notify / disconnect them. The option can be found under "settings->Modify WISP (Subscriber Auto Notification / Disconnection section)". (See fig. 2.14-1)

**Subscriber Auto Notify / Disconnect ?**

**Invoice Payment Due based SAND**

☐ Create / Close Billing Issues

☐ Notification Emails

☐ Throttling / Auto Disconnection

Email From:  ?

Email To:  ?

Email Bcc:  ?

Create Billing Issue Date  ?

1st notification email date  ?

2nd notification email date  ?

Disconnection date  ?

Throttling date  ?

**Minimum Amount Owed**  ?

**Invoice SAND Processing Mode**

☒ Once a Day at a Specified Time ☐ Periodically

Disconnection Time (Server Local Time: 2011-12-29 16:49:00) Execute SAND each  minutes

:

Fig. 12.14-1: Minimum amount owed

## 2.15 Limit Traffic Emails Amount

A new feature has been added which allows an operator to limit the number of Traffic SAND emails they send within a month to a customer.

The 'Email Limit' feature can be very useful for operators that use automated overage billing with a small overage allowance - when customers go over the CAP multiple times a month/day. Using this feature, an operator can limit the number of notices a customer will get to a predefined number. This option might vastly improve a customer's experience. The configuration for these emails is set under modify WISP as per fig. 2.15-1.

☒ Overage Billing / Throttling / Auto Disconnection  
☐ Do not carry over overage top-ups to the next period  
☒ Do not prorate the CAP in the first month

Email From: test1@wp.pl ?  
 Email To: test1@wp.pl ?  
 Email Bcc: test1@wp.pl ?

1st notification email threshold [%]: 81 ?  
 2nd notification email threshold [%]: 92 ?  
 Disconnection threshold [%]: 101 ?  
 Overage/Throttling threshold [%]: 112 ?

Calculation Period: Based on the last day of the month ?

**Traffic Limit SAND Processing Mode**  
☐ Once a Day at a Specified Time  
☒ Periodically  
 Disconnection Time (Server/Local Time: 2012-08-27 06:32:42)  
 Execute SAND each 10 minutes

Email Limit (monthly): 5 ?  
 Email Limit (monthly): 5 ?  
 Email Limit (monthly): 5 ?  
 Email Limit (monthly): 5 ?

Fig. 12.15-1: Monthly email limit

## 2.16 Overage T & C Agreement Page

A new feature has been added to SIMPLer that allows operators to display an "Overage T&C Agreement" page to customers that have been disconnected by the SAND (traffic) process as a result of exceeding their monthly CAP. A customer will have the choice of whether they want to agree to Overage T&C and be automatically billed for the Overage used going forward (indefinitely or until the end of the current month) or they may choose to deny the terms and be disconnected until next month.

The "Overage T&C Agreement" page can be enabled from "Modify WISP" page. Under the "End User Portal Settings" section there is a set of "Overage Agreement Page" settings (see fig. 2.16-1) that can be used to enable this feature.

New Customer - Password Change at First Login: off ?  
 Overage Agreement Page: on ?  
 Overage Agreement Page - Customer not found Message: EUP - Customer Not Found ?  
 Overage Agreement Page - Limit Overage to 1 month: on ?  
 Overage Agreement Page - Overage Product ID: 57 ?  
 Overage Agreement Page - Terms & Conditions: EUP - T & C ?  
 Overage Agreement Page - Terms Accepted Message: EUP - Accepted ?  
 Overage Agreement Page - Terms Rejected Message: EUP - Denied ?  
 Payment Gateway Type: merchant ?  
 Support - Add Maintenance Tickets via EUP: on ?

Fig. 2.16-1: Overage T&amp;C

## 2.17 Divide Subscription Allowance by Customer Frequency

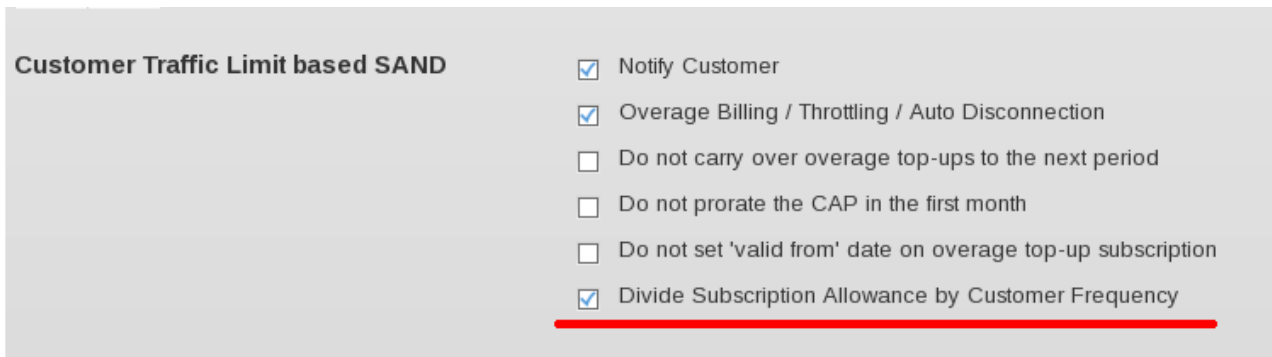
A new option has been added to the global SAND settings which allows operators to set their Traffic Limit Based SAND to divide customer subscription allowance by customer frequency.

This might be the desired option in a case where a customer has a yearly subscription but the operator wishes for the traffic allowance to be divided by twelve rather than to allocate the full bandwidth twelve times, as SAND runs on monthly usage. An example of this is for a customer on a yearly subscription (product has an allocation of 360GB), the operator would like this to be divided by frequency (ie by 12) to allocate 30 GB per month. To enable / disable this option:

Step One) Visit the settings -> modify WISP page.

Step Two) Scroll down to the Subscriber Auto Notify / Disconnect section.

Step Three) Check the box called “Divide Subscription Allowance by Customer Frequency”. (See fig. 2.17-1)



**Customer Traffic Limit based SAND**

- ☒ Notify Customer
- ☒ Overage Billing / Throttling / Auto Disconnection
- ☐ Do not carry over overage top-ups to the next period
- ☐ Do not prorate the CAP in the first month
- ☐ Do not set 'valid from' date on overage top-up subscription
- ☒ Divide Subscription Allowance by Customer Frequency

**Fig. 2.17-1: Divide Subscription Allowance by Customer Frequency**

## Annex A: Change history

Change history				
Date	Author(s)	Subject/Comment	Old	New
09/09/2010	Tomas	Draft	n/a	001
21/09/2010	Tomas	Changes made to format and overall structure and layout of first draft	001	100
24/11/2011	Justyna	Updated screenshots	100	101
13/Jun/13	paul	Changed doc's title, copyright and correct year, doc num on all pages	101	200
21/06/13	Emma	Reviewed and updated Document – page 1-13	200	201
28/06/2013	Emma	Some updates to Lodgement Failure SAND section	201	202
04/07/2013	Emma	Review and update page 13 - 25	202	203
05/07/2013	Emma	Review and update page 25 – end. Add some new features to manual	203	204
08/07/2013	Emma	Updated features	204	205
22/08/2013	Paul	Updated features	205	206

□