Test configuration proposal

When designing a given test, consideration must be given to a number of variables. The parameters for defining a particular test configuration are as follows:

1. Test hardware
   * Hardware platform – CPU type, memory size
   * I/O requirements – network and other I/O interfaces
2. Windows version installed on hardware

* In current practice the first two items are defined by a machine instance, as configured. The machine image is restored from a server before testing commences. A given test configuration needs to select a suitable machine configuration matching requirement.

1. INtime product
   * INtime standard product
   * CMP1: INtime + CMP1 components
   * CMP3: INtime + CMP3 components
2. INtime product version
   * Defined by product build number.   
     Note that most daily testing is against the “latest available” version, but testing of release candidates or previously released product will require the selection of a particular version.
3. INtime configuration

This configures memory and core allocations to nodes, assign hardware interfaces to nodes, as required by test.

* Items 3, 4 and 5 may be applied by an installation script after the machine is reimaged
  + Install the selected product
  + Apply a configuration script.

Inputs can be product installation scripts, and product configuration scripts. These scripts can be pre-generated and selected when initializing a test machine.

1. Test suites
   * A binary or a set of binaries implementing multiple tests. Generally, a suite contains tests grouped to test a particular feature, such as the INtime API, or the C library.
2. Test configurations
   * A test suite may be executed in different modes, to test different product configurations, or to test different code paths.
   * Test configuration, including product configuration changes may be modified by input parameters.   
     Examples:
     1. An exchange test between two threads can be configured to run on one core, or two cores in one node
     2. An INtime test suite may be run in XM mode, or non-XM mode.
     3. An NTX test may be run against a local INtime node, or against a remote INtime node.
     4. A region test may be configured by changing the node configuration to change the max nested region count between runs of the same test.
     5. A compilation test may be configured to use different version of Visual Studio for each run of the test.
   * In some cases, there may be no specific configuration required to run the test

* Currently a test configuration is defined by a RB script for each configuration. The script is used to configuration and run the test.  
  It is envisaged that the RB scripts may be generated from an input file of parameters

1. Test
   * A Test may be defined as a suite combined with a specific configuration for that suite. The configuration file is used to generate the RB script used to run the test suite.
2. Test groups
   * A set of Tests may be grouped where convenient.

# Strategy

To define a given test the following must be supplied:

1. Select a suitable machine from hardware platform/Windows versions/I/O requirements.
2. Apply a product installation script for the selected product and version
3. Apply a product configuration script
4. Apply a list of tests or test groups to run

# Actions

* 3. Product definitions to be completed and instructions generated to install products so that scripts may be created.
* 4. Allow for selection of specific versions of product
* 5. Define INtime configurations required. This will be an output of the test definition phase of a project.
* Generated configuration “scripts” for each INtime configuration defined.
* 6. List test suites and possible configurations for each suite, where applicable.
* When generating new test suites, also define the possible configurations in which to run the suite.
* 7. Define possible parameters for adding to a test configuration. An input file containing the parameters will be used to generate the script to run a particular test configuration.
* 8. Create a tool for converting the parameter files into test scripts